



EE300Ex Series

**HUMIDITY / TEMPERATURE
TRANSMITTER**

**For Intrinsically Safe
Applications**

Operating instructions

YOUR PARTNER IN SENSOR TECHNOLOGY



ELEKTRONIK[®]
Ges.m.b.H.

The operating instructions form part of the equipment supplied and are used to ensure optimal operation and functioning of the device.

E+E Elektronik® Ges.m.b.H. provides no warranty of any kind on this publication and no liability for improper use of the products described.

To ensure perfect functioning, these operating instructions must be read carefully and observed before the transmitter is commissioned. These instructions must be provided to all persons responsible for mounting, commissioning, operation, inspection, maintenance and repair.

These operating instructions must not be used for the purposes of competition without our written permission and must not be forwarded to third parties. Copies may be made for internal purposes. All information, technical data and technical diagrams included in these instructions were correct in accordance with the data available at the time of writing.

The company E+E Elektronik GmbH reserves the right to make modifications at any time and without prior notification, with no update requirement on models produced before the modification date. For this reason, we request that you contact our customer service department, quoting the device number, designation and type given on the nameplate.

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USA

FCC notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CANADIAN

ICES-003 Issue 5:

CAN ICES-3 B / NMB-3 B

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1. GENERAL NOTES

1.1 Explanation of symbols



This symbol indicates safety information.

It is essential that this safety information is followed. The manufacturer accepts no liability in the case of contravention. The risk is borne solely by the user.



This symbol indicates an instruction.

These instructions should be observed to achieve optimum functioning of the device.



This symbol indicates regulations that must be observed in hazardous areas at risk of explosion.



1.2 Safety instructions

1.2.1 General safety instructions

In the event of **improper** or **incorrect** use of the device, the following risks occur:

- Hazards for the device and other assets of the user as well as
- Hazards that impair the efficient working of the device.

The following instructions should be observed to ensure personal safety:

- Only qualified or specially trained personnel should be permitted to work on or operate the device.
- These operating instructions must always be available to all persons carrying out mounting, commissioning, operation and servicing.
- It is essential that the device is only operated when in perfect operating condition.
- Any faults determined must be rectified immediately by specialist personnel or by E+E Elektronik customer services.
- No technical modifications to the device are permitted.
- Take care when unscrewing the filter cap as the sensor element may be damaged in the process.
- The sensor element is an ESD-sensitive component, i.e. ESD safety measures must be observed when touching the sensor element.
- Only touch sensors on the connecting wires.
- The devices are designed for operation on safety extra-low voltage (safety class III).

1.3 Environmental aspects



Products from E+E Elektronik® are developed incorporating all important environmental aspects. For this reason, avoiding environmental contamination should also be observed during disposal as well.

On disposal of the transmitter, the individual components must be separated by type. The electronics must be collected in electronics waste and disposed of correctly.

2. TECHNICAL DESCRIPTION

2.1 General

The entire EE300Ex transmitter can be installed directly in the explosion hazard area.

The EE300Ex is the ideal transmitter in challenging industrial applications. The housing and measurement sensor made from stainless steel, as well as the proven E+E humidity sensors, ensure reliable and stable measurement results over long periods.

The EE300Ex has a 2-wire design and has two individually scalable analogue outputs with 4...20mA. In addition to the measured values for **relative humidity** and **temperature**, the transmitter also delivers the following calculated values:

• Absolute humidity	dv
• Wet-bulb temperature	Tw
• Specific enthalpy	h
• Dew-point temperature	Td
• Frost point temperature	Tf
• Mixing ratio	r
• Water vapour partial pressure	e
• Water activity	aw
• Water content in mineral transformer oil	x [ppm]
• Water content in customer-specific oil	x [ppm]

The EE300Ex-HT humidity / temperature transmitter is available in the following designs:

Model	pressure range	working range	Ø-probe
A - wall mounting		-40...60°C (-40...140°F)	12mm (0.47")
remote sensing probe up to 20bar (300psi)	0.1...20 bar (1.5...300 psi)	-40...180°C (-40...356°F)	12mm (0.47")
E - remote sensing probe up to 20bar (300psi) with moveable fitting for assembly / disassembly under pressure	0.1...20 bar (1.5...300 psi)	-40...180°C (-40...356°F)	13mm (0.51")
M - remote sensing probe up to 300bar (4351psi)	0.01...300 bar (0.15...4351 psi)	-40...180°C (-40...356°F)	12mm (0.47")
U - remote sensing probe for sensor retraction tool PN250	0.01...300 bar (0.15...4351 psi)	-40...180°C (-40...356°F)	12/15 (0.47/0.59)

The EE300Ex-xT temperature transmitter is available in the following designs:

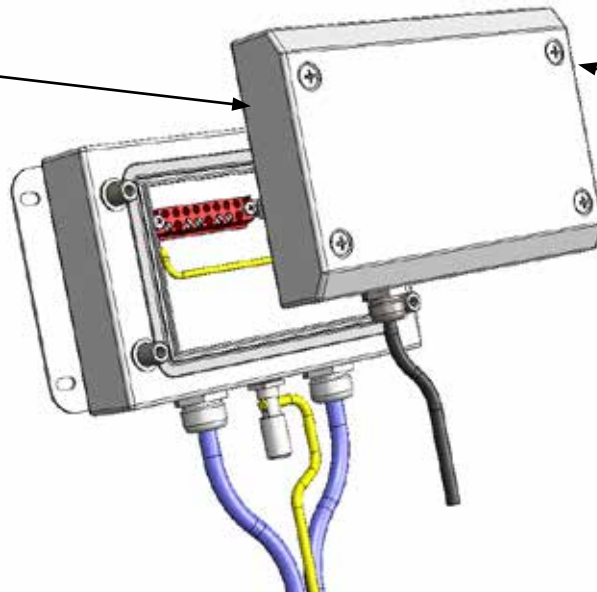
Model	pressure range	working range	Ø-probe
A - wall mounting		-40...60°C (-40...140°F)	6mm (0.24")
M - remote sensing probe	0.1...20bar (1.5...300psi)	-70...200°C (-94...392°F)	6mm (0.24")

2.2 EE300Ex labeling



Each EE300Ex is only characterized for one certificate. The Ordering Code on the Product label shows the type of the Ex Certificate on position "Ex-certificate". The exact Ex marking with the certificate number is printed on the Hazardous label (Ex marking). EE300Ex with IECEx, USA or Canada labeling must not be installed in the European Union.

**Hazardous Label
(Ex marking)**



Product Label

ATEX hazardous label (for EE300Ex without display)

E+E Elektronik A-4209 Engerwitzdorf
 TPS 13 ATEX 38892 003 X
 II 1 G Ex ia IIC T4 Ga
 II 1 D Ex ia IIC T80°C Da
 Electrical Data - See Manual
 -40°C ≤ Ta ≤ 60°C

Ui = 28V li = 100mA
 Pi = 700mW Ci = 2,2nF
 Li = negligibly small
 Series: D 072015



ATEX product label (Example)

HUMIDITY / TEMPERATURE TRANSMITTER
EE300Ex-HT6SExBGFHD1AT/MUW001Tx005
 CH1: RH: 4-20mA = 0...100 %RH
 CH2: T: 4-20mA = 0...100 °C
 Supply: (9 + RL * 0,02)VDC...28VDC



IECEx hazardous label (for EE300Ex without display)

E+E Elektronik A-4209 Engerwitzdorf
 IECEx FMG 14.0017 X
 Ex ia IIC T4 Ga
 Ex ia IIC T131°C Da
 Electrical Data - See Manual
 -40°C ≤ Ta ≤ 60°C

6.4Vdc ≤ Ui < 28Vdc
 li = 100mA Pi = 700mW
 Ci = 2,2nF
 Li = negligibly small
 Series: D 072015

IECEx product label (Example)

HUMIDITY / TEMPERATURE TRANSMITTER
EE300Ex-HT6SExBGFHD1IC/MUW001Tx005
 CH1: RH: 4-20mA = 0...100 %RH
 CH2: T: 4-20mA = 0...100 °C
 Supply: (9 + RL * 0,02)VDC...28VDC



USA/CANADA hazardous label (for EE300Ex without display)

E+E Elektronik A-4209 Engerwitzdorf
 IS/I,II,III/1/ABCEFG/T4 -40°C < Ta < 60°C; Entity - M1_1309080; IP65
 NI/I,II,III/2/ABCEFG/T4 -40°C < Ta < 60°C
 I/O/AEx ia/IIC/T4 -40°C < Ta < 60°C; - M1_1309080; Entity; IP65
 I/O/Ex ia/IIC/T4 -40°C < Ta < 60°C/Ga; - M1_1309080; Entity; IP65
 20/AEx ia/IIC/T131°C -40°C < Ta < 60°C; - M1_1309080; Entity; IP65



USA/CANADA product label (Example)

HUMIDITY / TEMPERATURE TRANSMITTER
EE300Ex-HT6SExBGFHD1FM/MUW001Tx005
 CH1: RH: 4-20mA = 0...100 %RH
 CH2: T: 4-20mA = 0...100 °C
 Supply: (9 + RL * 0,02)VDC...28VDC



2.3 Certification

EUROPE:

The EE300Ex transmitter fulfils the **ATEX Directives** on intrinsically safe operating equipment.

Applied standards for ATEX:

- **EN 1127-1:2011**
- **EN 60079-0:2012**
- **EN 60079-11:2012**



The EC type approval test has been carried out by TÜV SÜD Product Service GmbH.



Certified to EC type approval test **TPS 13 ATEX 38892 003 X**.

Entity parameters $U_i = 28V$; $I_i = 100mA$; $P_i = 700mW$; $C_i = 2,2nF$; $L_i \approx 0mH$

Ex-Designation

Transmitter without display  II 1 G Ex ia IIC T4 Ga /  II 1 D Ex ia IIIC T80°C Da

Transmitter with display  II 2 G Ex ia IIC T4 Gb /  II 1 G Ex ia IIB T4 Ga

Remote sensing probe  II 1 G Ex ia IIC T6-T1 Ga /  II 1 D Ex ia IIIC T80°C...200°C Da

Working temperature range for the probes:

Specification of the temperature class "TKG" for use in gas area exposed to explosion hazards and "TKD" for use in dust area exposed to explosion hazards as a function of the ambient temperature "Tamb" for the humidity and temperature probe and the temperature probe:

TKG	TKD	Humidity and Temperature Probe	TKG	TKD	Temperature Probe
T6	80°C	-40°C ≤ Tamb ≤ +60°C	T6	80°C	-70°C ≤ Tamb ≤ +60°C
T5	95°C	-40°C ≤ Tamb ≤ +75°C	T5	95°C	-70°C ≤ Tamb ≤ +75°C
T4	130°C	-40°C ≤ Tamb ≤ +110°C	T4	130°C	-70°C ≤ Tamb ≤ +110°C
T3	195°C	-40°C ≤ Tamb ≤ +175°C	T3	195°C	-70°C ≤ Tamb ≤ +175°C
T2	200°C	-40°C ≤ Tamb ≤ +180°C	T2	220°C	-70°C ≤ Tamb ≤ +200°C
T1	200°C	-40°C ≤ Tamb ≤ +180°C	T1	220°C	-70°C ≤ Tamb ≤ +200°C

INTERNATIONAL:

Applied Standard for IECEx:

- **IEC 60079-0:2011**
- **IEC 60079-11:2011**

The Certificate of Conformity has been carried out by FM Approvals.

Certificate No.: **IECEx FMG 14.0017 X**

Entity parameters: $6.4 Vdc \leq U_i \leq 28Vdc$; $I_i = 100mA$; $P_i = 700mW$; $C_i = 2,2nF$; $L_i = 0mH$

Ex-Designation

Transmitter without display Ex ia IIC T4 Ga / Ex ia IIIC T131°C Da

Transmitter with display Ex ia IIC T4 Gb / Ex ia IIB T4 Ga

Remote sensing probe Ex ia IIC T6-T1 Ga / Ex ia IIIC T80°C Da

Humidity and temperature probe:

- T6 temperature class based on -40°C (-40°F) ≤ Ta ≤ 60°C (140°F)
- T5 temperature class based on -40°C (-40°F) ≤ Ta ≤ 75°C (167°F)
- T4 temperature class based on -40°C (-40°F) ≤ Ta ≤ 110°C (230°F)
- T3 temperature class based on -40°C (-40°F) ≤ Ta ≤ 175°C (347°F)
- T2 temperature class based on -40°C (-40°F) ≤ Ta ≤ 180°C (356°F)
- T1 temperature class based on -40°C (-40°F) ≤ Ta ≤ 180°C (356°F)

Temperature probe:

- T6 temperature class based on -70°C (-94°F) ≤ Ta ≤ 60°C (140°F)
- T5 temperature class based on -70°C (-94°F) ≤ Ta ≤ 75°C (167°F)
- T4 temperature class based on -70°C (-94°F) ≤ Ta ≤ 110°C (230°F)
- T3 temperature class based on -70°C (-94°F) ≤ Ta ≤ 175°C (347°F)
- T2 temperature class based on -70°C (-94°F) ≤ Ta ≤ 200°C (392°F)
- T1 temperature class based on -70°C (-94°F) ≤ Ta ≤ 200°C (392°F)

USA:

Applied Standard for the U.S. NEC 500, NEC505 and 506:

• FM Class 3600	2011
• FM Class 3610	2010
• FM Class 3611	2004
• FM Class 3810	2005
• ANSI/ISA 61010-1	2004
• ANSI/ISA 60079-0	2009
• ANSI/ISA 60079-11	2011

The Certificate of Conformity has been carried out by FM Approvals.

Entity parameters:

$$6.4 \text{ Vdc} \leq V_{\max} \text{ (or } U_i) \leq 28 \text{ Vdc; } I_{\max} \text{ (or } I_i) = 100\text{mA; } P_i = 700\text{mW; } C_i = 2,2\text{nF; } L_i = 0\text{mH}$$

Ex-Designation NEC 500 (Division)

Transmitter without display	IS / I,II,III / 1 / ABCDEFG / T4 Ta = 60°C NI / I,II,III / 2 / ABCDEFG / T4 Ta = 60°C
Transmitter with display	IS / I / 1 / CD / T4 Ta = 60°C IS / I / 2 / ABCD / T4 Ta = 60°C NI / I / 2 / ABCD / T4 Ta = 60°C
Remote sensing probe	IS / I,II,III / 1 / ABCDEFG / T6-T1 NI / I,II,III / 2 / ABCDEFG / T6-T1

Humidity and temperature probe:

- T6 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$
- T1 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$

Temperature probe:

- T6 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$
- T1 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$

Ex-Designation NEC 505/506 (Zone)

Transmitter without display	I / 0 / AEx ia / IIC / T4 Ta = 60°C 20 / AEx ia / IIIC / T131°C
Transmitter with display	I / 0 / AEx ia / IIB / T4 Ta = 60°C I / 1 / AEx ia / IIC / T4 Ta = 60°C
Remote sensing probe	I / 0 / AEx ia / IIC / T6-T1 20 / AEx ia / IIIC / T80°C

Humidity and temperature probe:

- T6 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$
- T1 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$

Temperature probe:

- T6 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$
- T1 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$

Canada:

Applied Standard for Canada CEC Section 18 and Annex J:

- CSA 22.2 No. 0-M91 2006
- CSA 22.2 No. 61010-1 2004
- CSA 22.2 No. 157 2006
- CSA 22.2 No. 60079-0 2007
- CSA 22.2 No. 60079-11 2011
- CAN/CSA C 22.2 No. 142-M1987 2004
- CAN/CSA C 22.2 No. 213-M1987 2004

The Certificate of Conformity has been carried out by FM Approvals.

Entity parameters:

$$6.4 \text{ Vdc} \leq V_{\max} \text{ (or } U_i) \leq 28 \text{ Vdc}; I_{\max} \text{ (or } I_i) = 100\text{mA}; P_i = 700\text{mW}; C_i = 2,2\text{nF}; L_i = 0\text{mH}$$

Ex-Designation CEC Section 18 and Annex J (Division)

Transmitter without display	IS / I,II,III / 1 / ABCDEFG / T4 Ta = 60°C NI / I / 2 / ABCD / T4 Ta = 60°C
Transmitter with display	IS / I / 1 / CD / T4 Ta = 60°C IS / I / 2 / ABCD / T4 Ta = 60°C NI / I / 2 / ABCD / T4 Ta = 60°C
Remote sensing probe	IS / I,II,III / 1 / ABCDEFG / T6-T1 NI / I / 2 / ABCD / T6-T1

Humidity and temperature probe:

- T6 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$
- T1 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$

Temperature probe:

- T6 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$
- T1 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$

Ex-Designation CEC Section 18 (Zone)

Transmitter without display	I / 0 / Ex ia / IIC / T4 Ta = 60°C Ga
Transmitter with display	I / 0 / Ex ia / IIB / T4 Ta = 60°C Ga I / 1 / Ex ia / IIC / T4 Ta = 60°C Gb
Remote sensing probe	I / 0 / Ex ia / IIC / T6-T1 Ga

Humidity and temperature probe:

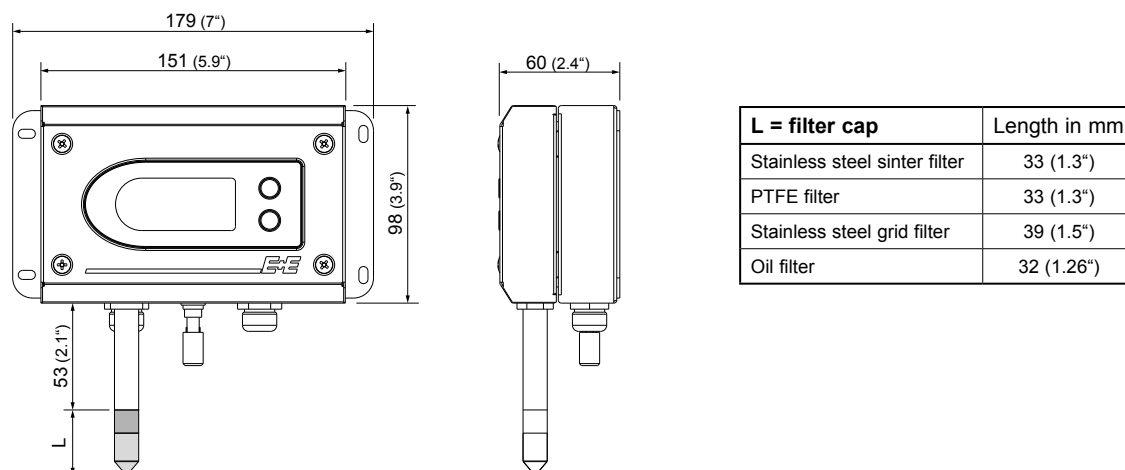
- T6 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$
- T1 temperature class based on $-40^{\circ}\text{C} (-40^{\circ}\text{F}) \leq T_a \leq 180^{\circ}\text{C} (356^{\circ}\text{F})$

Temperature probe:

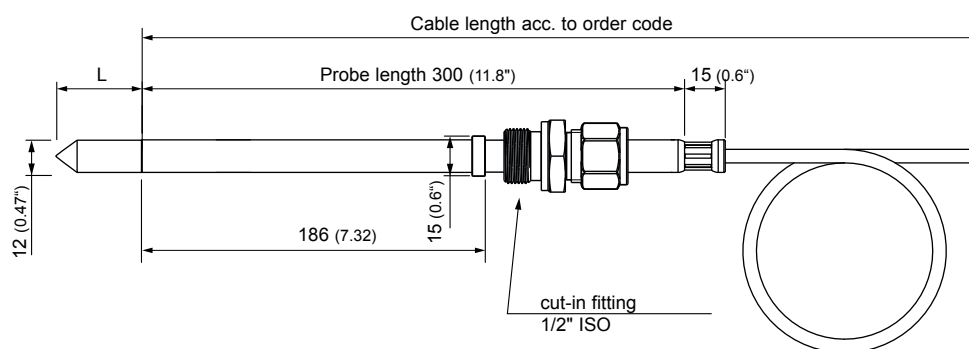
- T6 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 60^{\circ}\text{C} (140^{\circ}\text{F})$
- T5 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 75^{\circ}\text{C} (167^{\circ}\text{F})$
- T4 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 110^{\circ}\text{C} (230^{\circ}\text{F})$
- T3 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 175^{\circ}\text{C} (347^{\circ}\text{F})$
- T2 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$
- T1 temperature class based on $-70^{\circ}\text{C} (-94^{\circ}\text{F}) \leq T_a \leq 200^{\circ}\text{C} (392^{\circ}\text{F})$

2.4 Housing and probe dimensions

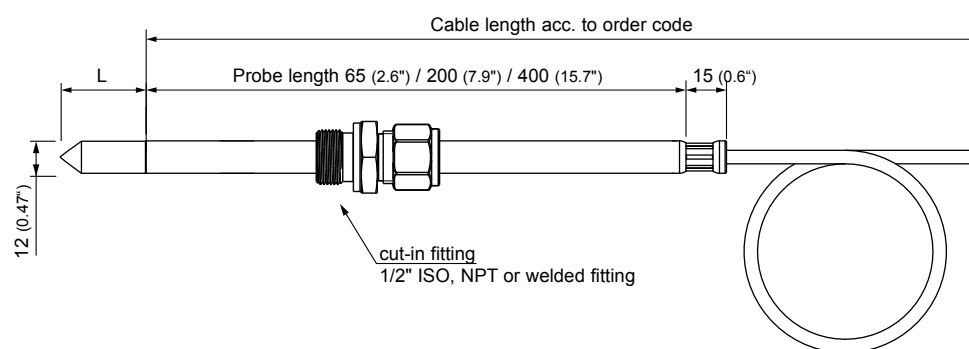
Wall mounting humidity and temperature - Model A



Remote sensing probe humidity/temperature up to 300 bar (4351 psi) - Model U

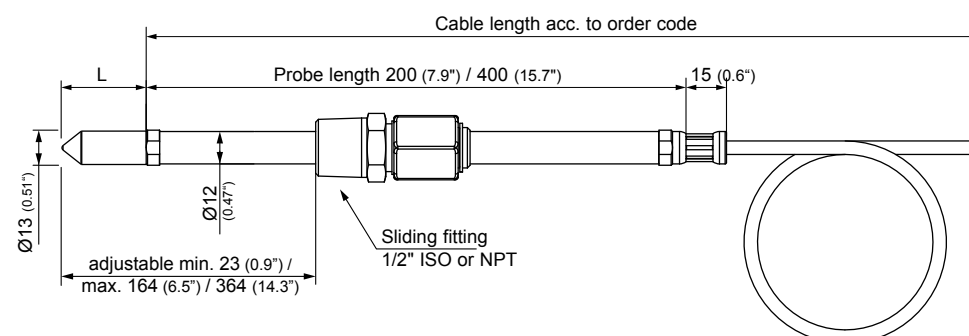


Remote sensing probe humidity/temperature up to 20bar (300psi) or 300 bar (4351 psi) - Model E and M



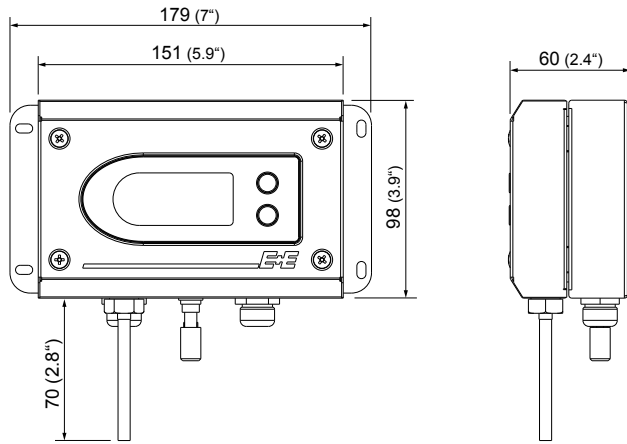
Pressure-tight probe up to 300 bar (4351 psi) have a leak rate A according to EN12266-1

Remote sensing probe humidity/temperature up to 20bar (300psi) - Model E with sliding fitting

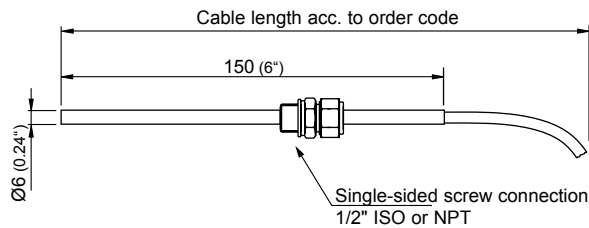


Pressure-tight probe up to 20bar (300psi) have a leak rate B according to EN12266-1

Wall mounting temperature - xT model

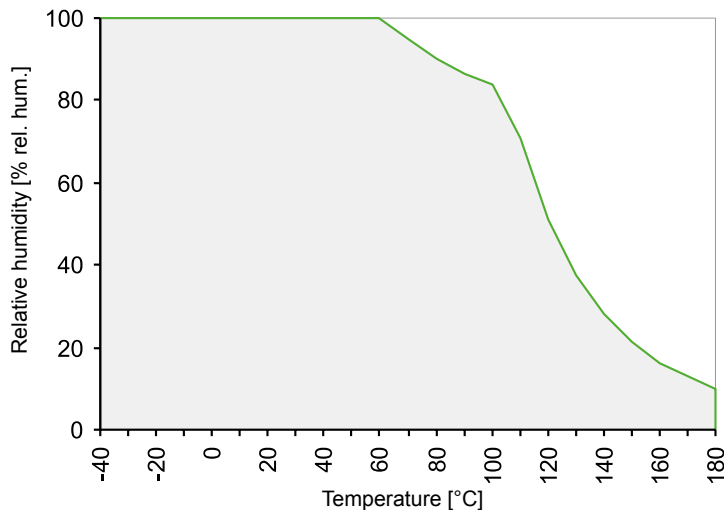


Remote sensing probe temperature



2.5 Humidity probe working range

The grey area shows the allowed measurement range for the humidity sensor. Although working points that lie outside of this range do not lead to the destruction of the element, the specified measurement accuracy cannot be guaranteed, however.



2.6 Dewpoint measurement in natural gas

Valid only for EE300Ex-HT6S...Gx (Special option for natural Gas application)

The accuracy of the dewpoint measurement is affected by the working pressure. The actual working pressure has to be set with the configuration software.

Menu item "Configuration" --> "Parameters"

Factory setting: 1013.25 mbar

2.7 Measurement of moisture in oil



Besides measurement in the air, the EE300Ex can be employed for measurement of both absolute water content (x) in ppm or relative water activity (aw) in oils. The USA and Canada approval is valid for air and gas measurement only.

3. INSTALLATION IN AN EXPLOSION HAZARD AREA

3.1 General



The EE300Ex has been certified in accordance with the ATEX 94/9EC Directive, IECEx Scheme, , National Electrical Code (ANSI-NFPA 70 (NEC®) and Canadian Electrical Code (CSA C22.1).



Devices in explosion-hazard areas are only permitted for operation in atmospheric conditions

-20 °C (-4°F) ≤ T ≤ 40 °C (104 °F)
0.8 bar (12 psi) ≤ p ≤ 1.1 bar (16 psi)
In air normally 21 % (V/V)

If suitable measures have been carried out in accordance with EN1127-1, the EE300Ex is also permitted for operation outside atmospheric conditions in line with the manufacturer's instructions.



When conducting measurements in explosion-hazard areas, the EE300Ex must always be connected via intrinsically safe power supply devices or protective barriers.

Even if only the measurement probe is installed in the explosion hazard area, the EE300Ex must be supplied using intrinsically safe equipment.

Rules for the interconnection of intrinsically safe electrical circuits in accordance with EN60079-14, EN60079-25 and IEC60079-14, IEC60079-25 (proof of intrinsic safety in the system description) and national requirements should be followed. For the U.S., Canada see Control Drawing M1_1309080 and ANSI/ISA RP12.6.01, NEC and CEC.



If a risk analysis of the installation in line with EN1127-1 reveals a risk of lightning strike, an overvoltage protection device should be installed in the intrinsically safe circuits.

Requirements for the installation of overvoltage protective devices can be found in the standard EN60079-25. For the U.S., Canada see ANSI/ISA RP12.6.01, NEC and CEC.

Example of an overvoltage protection device

Manufacturer: Dehn

Type: ITAK EXI BXT 24

to protect intrinsically safe measurement circuits for 2DA

C2 nominal discharge surge current: (8/20) 20 kA

Nominal voltage: 30 V DC

max. permiss. input voltage: 33 V DC

max. permiss. input current: 0.5 A

Alu housing, grey, protection rating: IP 65



ATEX Approval:

II 2 (1) G Ex ia IIC T4, T5, T6

II 2 G Ex ib IIC T4, T5, T6



Follow the installation instructions from DEHN!



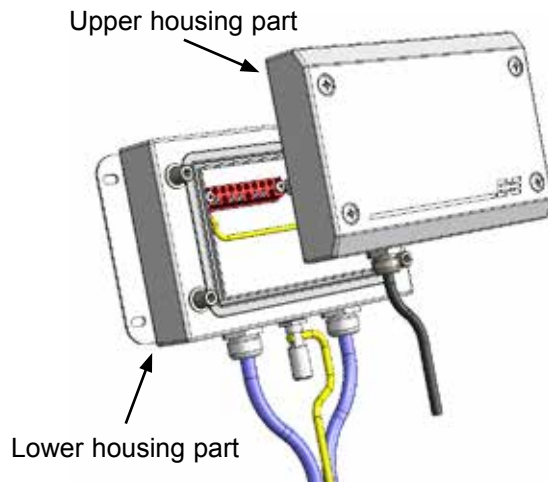
Each EE300Ex is provided with its production date. The production date is shown on the label (after the series) as follows:

WWYYYY WW week of the year of construction
YYYY year of construction

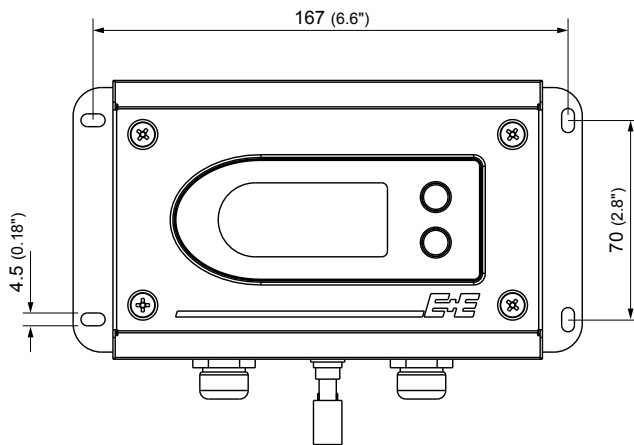
3.2 Housing assembly

The EE300Ex housing has a two-part construction.

- Lower housing section with the connection and earthing terminals.
- Upper housing section with the electronics and measurement probe.



3.2.1 Drilling plan for the housing



The lower housing section is mounted using 4 screws.
Screw diameter < 4.5mm (0.18")



If the upper housing section is removed from the hazard area, e.g. for a calibration, the empty lower section should be protected against dirt and electrostatic charge via a cover HA011401.



Unused cable glands should be sealed using a sealing plug.

3.3 Assembly in category 1 (zone 0 / 20); Division 1



Only intrinsically safe power supply devices are approved to supply EE300Ex in category 1 or Division 1.



In areas belonging to gas group IIC or Class I, Division 1, Group A,B, it must be ensured that during installation and operation, the possibility of impact and friction sparks has been excluded in rarely occurring fault situations.



Work on open transmitter must only be performed if it is guaranteed that no explosive atmosphere is present.



In category 1 or Division 1, the sensor line should be laid in an earthed metallic protective hose. With Group III or Class II, III, ensure that there are no dust or fibers and flyings deposits in the protective tube.



CH1 and CH2 must be galvanically isolated from one another during operation.



There is no display permitted in the gas hazard area EPL Ga for Group IIC or Class I, Division 1, group A, B, and in the dust hazard area for groups IIIA, IIIB and IIIC or Class II, III.



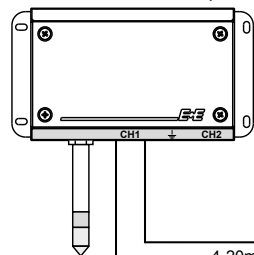
The probe for wall mounting is not permitted to be used for Zone or Division bushing.

EE300Ex (wall mounting) 1 channel via intrinsically safe power supply device:

Hazardous location T4...T1

Zone 0 / 20
no display with EPL Da; Db, Dc
and Ga IIC

Division 1
no display in Class II, III and
Class I, Division 1, Group A, B



Unclassified location

intrinsically safe
transmitter supply unit

Control

L+
L-

Power supply

EE300Ex (with remote sensing probe) 2 channels via intrinsically safe power supply device:

Hazardous location T6...T1

Zone 0 / 20
Division 1
Class I,II,III
Group A, B, C, D, E, F, G

up to T6 if EE300Ex is in
unclassified location.



Zone 1 2 / 21 22
Division 2
Class I,II,III
Group A, B, C, D, E, F, G

The bushing must conform to the hazard requirements of a Zone or Division implementation. The supplied screw connection meets this requirement!

Unclassified location

intrinsically safe
transmitter supply unit

Control

L+
L-

Power supply

3.4 Assembly in categories 2 and 3 (Zone 1 2 / 21 22), Division 2



Only intrinsically safe power supply devices and protective barriers are approved to supply EE300Ex in category 2 and 3 or Division 2.



No display is permitted in the dust hazard area (Group III) or Class II, III.

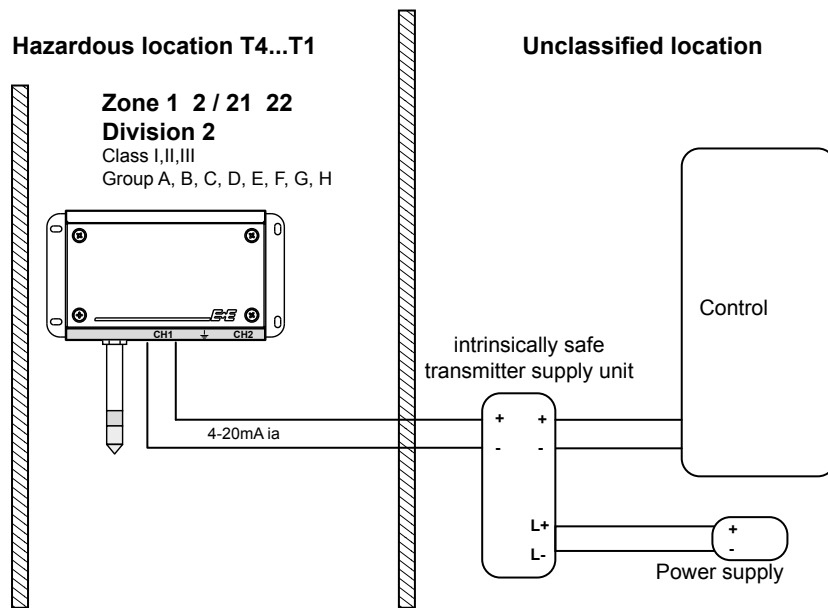


CH1 and CH2 must be galvanically isolated from one another during operation.

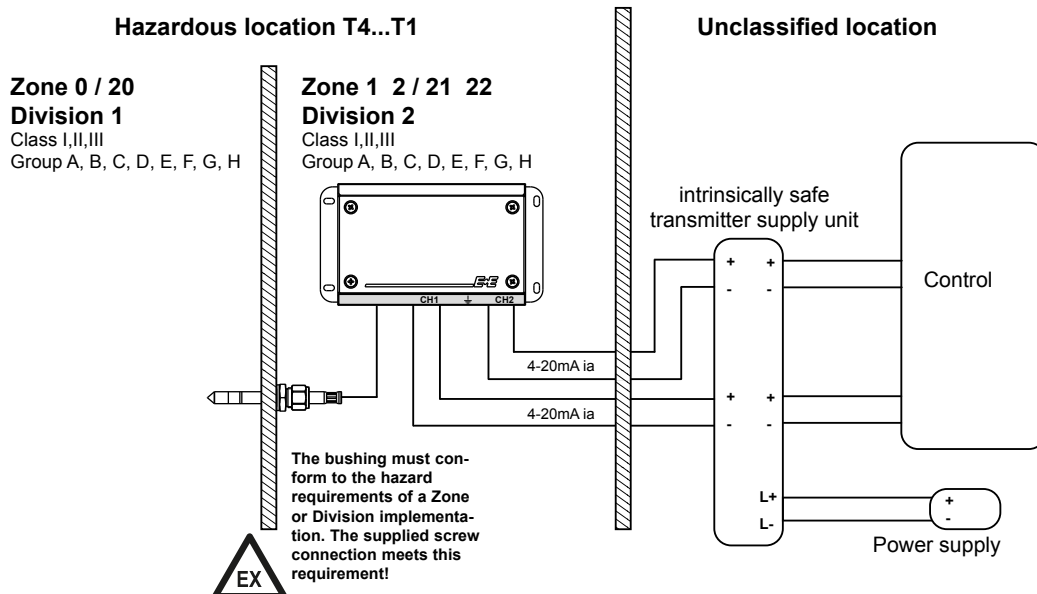


The probe for wall mounting is not permitted to be used for Zone or Division bushing.

EE300Ex (wall mounting) 1 channel via intrinsically safe power supply device:



EE300Ex (with remote sensing probe) 2 channels via intrinsically safe power supply device:



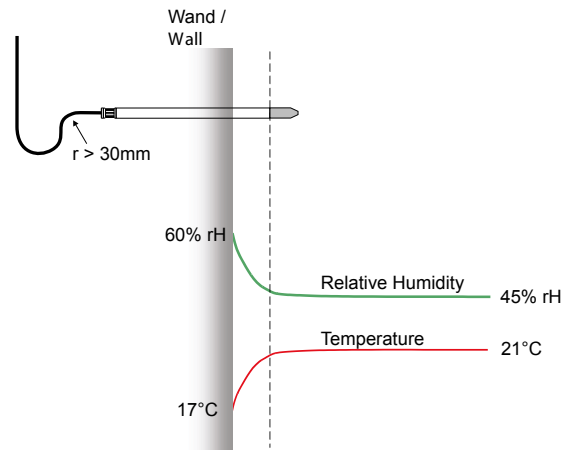
3.5 Mounting the measurement sensor



To mount the transmitter, select a location with stable conditions, i.e. protected against direct sunlight or rain. The measurement probe should be fitted at a location where representative measured values are to be anticipated for the process.

The measurement probe must be mounted horizontally or vertically (downwards). If possible, a drip tray should be placed into position before every installation.

A temperature drop along the measurement sensor should be avoided.



Mechanical ambient conditions

When installing the sensor, the mechanical influences of the installation site should be taken into account. (e.g. vibrations, shock loads via startup processes, temperature fluctuations,...). If the mechanical stability or seal on the probe cannot be ensured, additional mechanical fastening or support should be included.



The probe cable and connection cable should be handled and laid in the hazard area so that no static charges can arise (e.g. metal hose).



Filter caps

The following filter caps ensure sufficient protection against electrostatic discharges relating to explosion group IIB, but are **not** permitted for use in EPL Ga IIC or Class I, Division 1, Group A,B:

- PTFE filter (order code E)
- PTFE filter on metal body (order code K)
- H2O2 filter (order code L)

The following filter caps are permitted for use in EPL Ga IIC or Class I, Division 1, Group A,B:

- Stainless steel sinter filter (order code D)
- Stainless steel lattice filter (order code I)
- Oil filter (order code M)

3.5.1 Mounting the clamping ring screw connection



The clamping ring screw connection can be used as Zone or Division bushing. To do this, the screw connection is screwed into the isolating wall and must have a seal tightness of IP67.

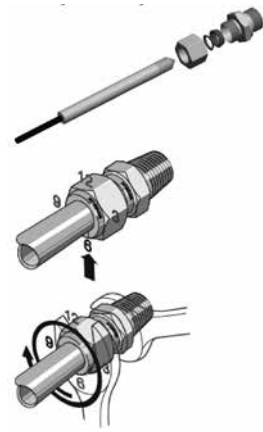


Safety instructions for pressure-tight screw connection:

- The system must not be vented by releasing the union nuts.
- Do not assemble and tighten pipe screw connections if the system is under pressure.
- Always use the correct thread sealant on conical pipe threads.
- Never rotate the screw connection body. Instead, hold the screw connection body securely and turn the union nut.
- Avoid unnecessary disassembly of unused pipe screw connections.

Installation instructions:

- Tighten the union nuts finger-tight.
- Mark the union nuts at the 6 o'clock position.
- Hold the screw connection body tight and tighten the union nuts with 1 ¼ turns to the 9 o'clock position.



Assembly with high pressure applications and applications with a high security factor:

- Tighten the union nuts until the pipe can no longer be turned by hand or can no longer be moved axially in the fitting.
- Mark the union nuts at the 6 o'clock position.
- Hold the screw connection body tight and tighten the union nuts with 1 ¼ turns to the 9 o'clock position.

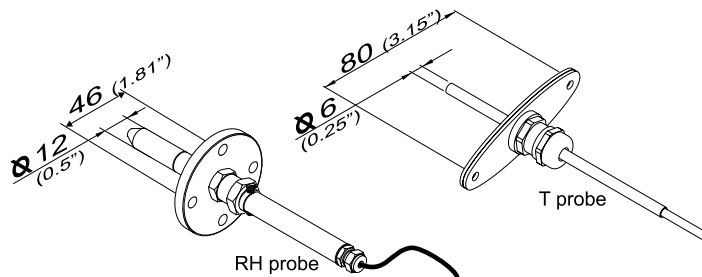
Re-mounting:

- Slide measurement sensor with clamping rings into the fitting as far as it will go.
- Tighten the nut "fingertight", then tighten by approx. a ¼ turn using a spanner.

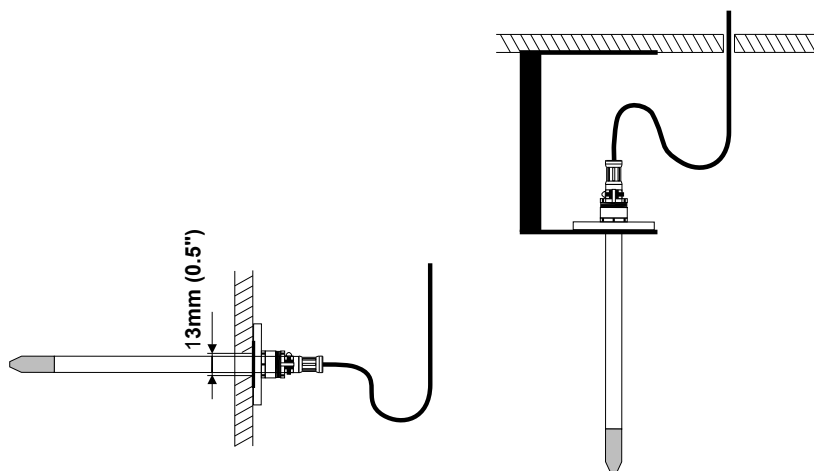
3.5.2 Mounting with mounting flange (optional)



The assembly flange must not be used as Zone or Division bushing, i.e. it must only be used for fastenings and bushings in explosion-hazard areas of the same category.



The measurement sensor must be mounted horizontally or vertically (downwards). If possible, a drip tray should be placed into position before every installation.



Horizontal mounting

Vertical mounting

3.5.3 Mounting the probe using ball valve (optional)

With ball valve mounting, the system being measured does not need to be emptied or brought to a standstill to mount or remove the probe. Install the sensor head against the flow direction.



It is only permitted to use one ball valve that is approved for use in explosion hazard areas.

The process pressure must be below 10bar (145psi).

The two metal sealing rings (see figure) should be replaced each time after being screwed on.

MOUNTING THE PROBE:

The mounting temperature is not permitted to deviate from the usage temperature by more than $\pm 40^{\circ}\text{C}$ (104°F).

- Mount the probe with the ball valve closed.
- Open the ball valve.
- Insert the sensor head through the ball valve into the process. A manual pressing tool is recommended at high pressure.
- To ensure that the probe is securely installed, the closing nut must be tightened at a defined torque of 30Nm.
If there is no torque wrench present, tighten the closing nut by hand as far as possible. Turn another $\sim 50^{\circ}$ using a suitable open-ended spanner.



A tightening torque that is too low results in a lower clamping force (fixing force) of the clamp sleeve. There is therefore a risk of injury due to the probe tube being driven out. An excessively high tightening torque can result in the permanent deformation of the clamping sleeve and the probe tube. This makes the removal and re-mounting process more difficult or impossible.

REMOVING THE PROBE:

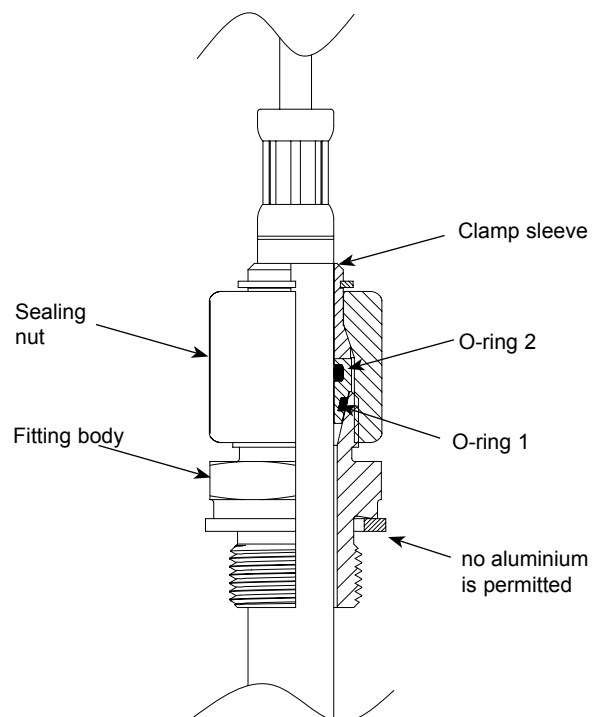
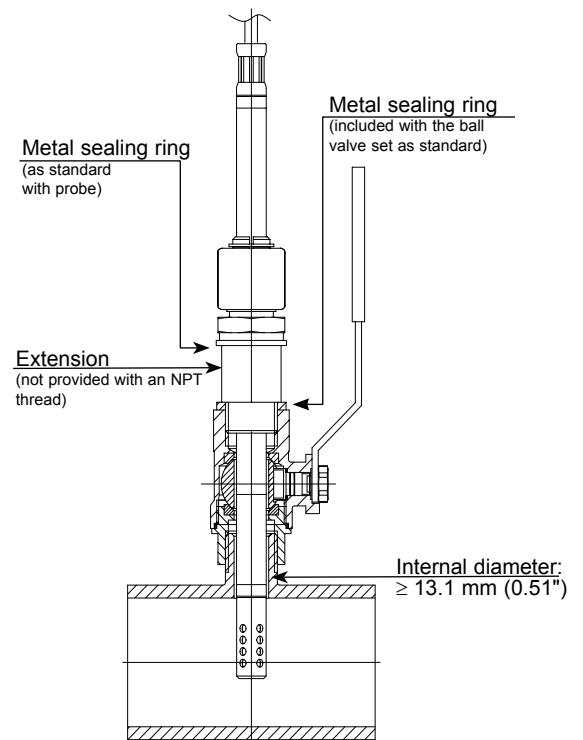


- Hold the probe tube tight. (Caution: Do not bend the connection cable)
- Slowly unfasten the closing nut using a spanner (spanner size 24) until the drive-out force affects the tube. Never fully remove the closing nut when installed, and instead screw on only as far as possible!
- After the sensor head has been removed from the process as far as it will go, close the ball valve.
- The probe can be fully removed.



Both for mounting and removal, ensure that O-ring 1 is correctly installed. If damaged, O-ring 1 can be replaced by the user.

O-ring type: 13x1.5mm (0.5"x 0.06") - FKM-60
Spare part order no. HA050308



3.5.4 Mounting the probe using sensor retraction tool (optional)



Observe the operating instructions of the sensor retraction tool!
It may only be used the sensor retraction tool ZM-WA-025-040-EST or BG-WA-103-045-EST.
With the sensor retraction tool 250 bar it may only be used the sensor probe model U.

The delivery scope of the sensor probe includes the copper sealing for the Swagelok screw connection.

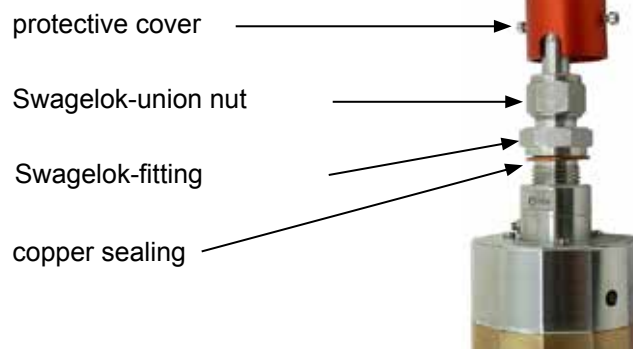


Make sure that the sensor retraction tool is in "SERVICE" position (see manual of the sensor retraction tool).

- Before installing the sensor, dismount the closing plug ½" by means of a hexagonal wrench 10 mm and "park" it at the thread hole M10 designed for that purpose.

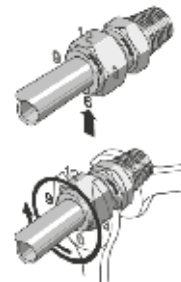


- Insert the sensor with copper sealing Swagelok and protective cover into the sensor retraction tool until the stop position.



- Fasten the Swagelok screw connection ½" in the sensor retraction tool with the open-jaw wrench (wrench size 27mm). Do not forget to check the copper sealing!
- At first manually tighten the Swagelok union nut with cutting ring. Pull back the probe until it stops and hold it.

- By means of a screw wrench, tighten the union nut just firmly enough that the screw connection cannot be moved manually any longer.
Mark the union nuts at the 6 o' clock position.



- Hold the screw connection body tight and tighten the union nuts with 1 ¼ turns to the 9 o'clock position.
- To mount the protective cover for the Swagelok protective cover, proceed in the following order:
 - Push the protective cover down to the adjusting device: screws must point to the flat area (wrench size 26mm)
 - Tighten screws M3.

3.6 Calculation of the maximum cable length

Intrinsically safe power supply device STAHL 9160/13-11-11 (order code HA011405)

Technical data for EE300Ex

Supply voltage: $U_{Bin} = 9V + R_L * 0.02A$
Max. current: $I_{out\ max} = 20mA$

Technical data for STAHL 9160/13-11-11

Nominal operating voltage: $U_N = 24V$
Input voltage for transmitter: $U_S = 16V$
Max. load: $R_L = 600\Omega$

Calculation of maximum cable length of intrinsically safe input isolator

Cable $0.75mm^2$ ($0.01in^2$) (example): $R_{cable} = 0.0267\Omega/m$
Load resistance (load): $R_L = 200\Omega$
Input voltage for transmitter: $U_S = 16V$
Min. supply voltage EE300Ex: $U_{Bmin} = 9V + 200\Omega * 0.02A = 13V$
Maximum voltage drop on cable: $U_{cable} = U_S - U_{Bmin} = 16V - 13V = 3V$
Total cable resistance: $R_{cable\ total} = R_{cable} * L_{total} * 2$ (supply and return line)
 $U_{drop} = R_{cable\ total} * I_{out\ max} = R_{cable} * L_{total} * 2 * I_{out\ max}$
Transform in accordance with L_{total} : $L_{total} = U_{drop} / (I_{out\ max} * 2 * R_{cable})$
 $L_{total} = 3V / (0.02A * 2 * 0.0267\Omega/m)$
 $L_{total} = 2800m$ maximum cable length



Caution: this is the max. length without allowing for the intrinsic safety.
(cable capacity and inductivity may reduce the length even further)

3.7 Selecting a suitable power supply device for ATEX Zone concept:

Example for evidence of the intrinsic safety in accordance with EN60079-14:2008 12.2.5.2, EN60079-25:2010 13.1. CH1 and CH2 are galvanically separated, meaning the evidence of the intrinsic safety can only be carried out using appropriate equipment.

Installation assumption:

Installing the EE300Ex (without display) in Zone 0

Connecting cable length: 300m (984ft)
Explosion group: IIC
Temperature class: T4

Both electric circuits laid in one cable.

Intrinsically safe power supply device STAHL 9160/13-11-11

(Excerpt from the EC type approval test certificate)

Certified to:

II 3 (1) G Ex nA nC [ia Ga] IIC T4 Gc (certificate number: DMT 03 ATEX E 010 X)
 II (1) D [Ex ia Da] IIIC (certificate number: DMT 03 ATEX E 010 X)

Entity parameters:

$U_0 = 27V$
 $I_0 = 88mA$
 $P_0 = 576mW$
 $C_0\ IIC = 90nF$
 $C_0\ IIB = 705nF$
 $L_0\ IIC = 2.3mH$
 $L_0\ IIB = 17mH$

Technical data for connecting cable

Cable type: ÖLFLEX® EB CY from manufacturer Lapp Kabel
Cable cross-section: $4 \times 0.75\text{mm}^2$ ($0.06 \times 0.01\text{in}^2$)
Operating capacity: 110nF/km
Inductivity: 0.65mH/km

Cable capacity for 300m (984ft): $CK = 0.3\text{km} * 110\text{nF/km} = 33\text{nF}$
Cable inductivity for 300m (984ft): $LK = 0.3\text{km} * 0.65\text{mH/km} = 0.195\text{mH}$

Technical data for EE300Ex (extract from the EC type approval test certificate)

Certified to:

II 1 G Ex ia IIC T4 Ga
II 1 D Ex ia IIIC T80°C Da

Entity parameters:

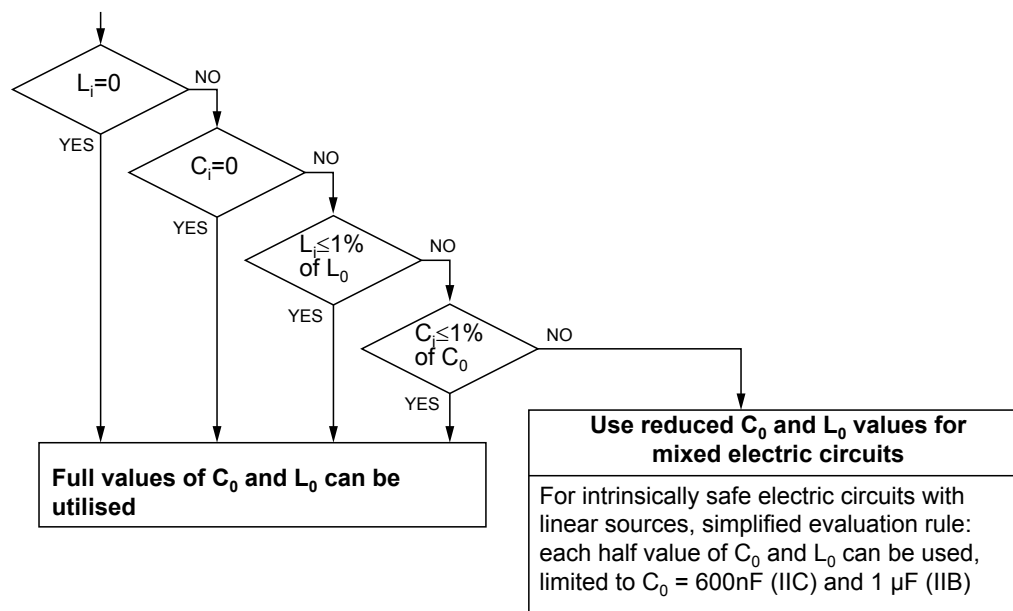
$U_i = 28\text{V}$
 $I_i = 100\text{mA}$
 $P_i = 700\text{mW}$
 $C_i = 2.2\text{nF}$
 $L_i = \text{negligibly small}$

Evidence of the intrinsic safety in accordance with EN60079-11:2012 EN60079-25:2010 (Appendix A)

$U_0 = 27\text{V}$	\leq	$U_i = 28\text{V}$	$\rightarrow \text{ok}$
$I_0 = 88\text{mA}$	\leq	$I_i = 100\text{mA}$	$\rightarrow \text{ok}$
$P_0 = 576\text{mW}$	\leq	$P_i = 700\text{mW}$	$\rightarrow \text{ok}$
$C_0 = 90\text{nF}$	\geq	$2.2\text{nF} + 33\text{nF}$	$\rightarrow \text{ok}$
$L_0 = 2.3\text{mH}$	\geq	$0\text{mH} + 0.195\text{mH}$	$\rightarrow \text{ok}$

Protection level of the intrinsically safe current circuit is met!

Evidence of the intrinsic safety in accordance with EN60079-11:2012, EN60079-25:2010 (Appendix A)



$L_i = \text{negligibly small} \rightarrow \text{no reduced } C_0 \text{ and } L_0 \text{ values required!}$

4. ELECTRICAL CONNECTIONS



It is essential that installation, electrical connection, commissioning, operation and maintenance in explosion hazard areas are only carried out by trained specialist personnel authorised to do so by the system operator.



Installation in accordance with NEC or CEC with consideration of the Control Drawing M1_1309080



For installation in an explosion hazard area, it is essential to ensure that all relevant standards are observed. For the installation, standard EN60079-14, EN60079-25 or IEC60079-14, IEC60079-25 is to be applied, and for repair and maintenance, the standards EN60079-17 or IEC60079-17 and EN60079-19 or IEC60079-19 as well as the relevant national regulations should be applied.



Installation in the U.S. must be carried out in accordance with ANSI / ISA RP 12.6.01-2003 and the National Electrical Code (NEC).
Installation in Canada must be carried out in accordance with the Canadian Electrical Code (CEC).



The EE300Ex is designed as a 2-wire current transmitter.
CH1 should always be connected, CH2 can also be activated if required.
Both outputs are galvanically isolated.



Cable ends must be fitted with the appropriate wire-end sleeves. After the connection in the terminal, an air gap of at least 2mm (0.08") must be left between the strands and a 6mm (0.2") air gap between channels 1 and 2.

Changes to the probe cable length are only permitted to be carried out by the manufacturer (transmitter will need to be re-calibrated).

4.1 Connecting cable



A shielded cable should be used. The shield should be laid on one side with the EE300Ex.



The cable must conform to the following specifications (requirements of EN60079-14, EN60079-25) for ATEX:

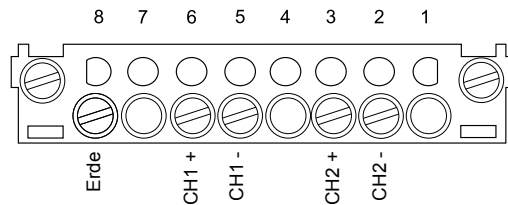
- Cable diameter 4 - 8mm (0.15-0.31")
- Maximum cross-section 1.5mm² (0.02in²)
- Single stranded wire diameter: $\geq 0.1\text{mm}$ (0.004")
- Test voltage wire-wire: $\geq 500\text{V AC eff.}$
- Test voltage wire-shield (if a cable with shield is being used): $\geq 500\text{V AC eff.}$
- Cable inductivity, cable capacity and conductor resistance are to be evaluated in the evidence of intrinsic safety
- Flame-resistant acc. to IEC60332-1-2

Additional requirements if both channels (CH1, CH2) are connected in a common cable:

- The test voltage wire-wire: must be $\geq 1000\text{V AC eff.}$
- The radial thickness of the insulation must be $\geq 0.2\text{mm}$ (0.008").
- The conductor insulation must withstand 500V AC eff.

➡ Cable ÖLFLEX® EB CY from manufacturer LAPP KABEL meets this requirement on request.

4.2 Terminal assignment EE300Ex



4.3 Configuration adapter

The digital interface is used only for device configuration and customer adjustment. The configurator software and the drivers are available for download free of charge from our website <http://www.epluse.com/en/service-support/download-center/>.



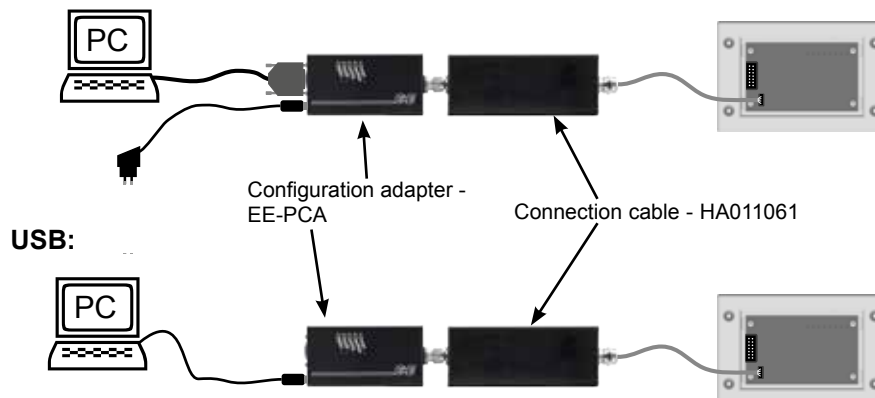
The EE300Ex in combination with the configurator software is only permitted for use outside the hazard area.



It may only be used the cable with protective circuit (aluminum housing on the 8 pin connector).

Connection from CH1 is NOT required for communication.

RS232 (the external power supply required is included as standard with the configuration adapter):



If the upper housing section of the EE300Ex with the electronics and measurement probe is removed, the lower housing section with the blanking plate (HA011401) should be sealed to protect against dirt and electrostatic charge.

4.4 Calibration of the current loop



Only appropriately approved multimeters are permitted for calibration in hazardous areas. During measurement with these multimeters, ensure that the requirements of the system description (proof of intrinsic safety) remain in force.

4.5 Grounding and potential equalization



The EE300Ex must be integrated into the potential equalization to avoid hazards from electrostatic charges. It shall apply the requirements of the standards EN60079-14, EN60079-25 or IEC60079-14, IEC60079-25. With a remote sensing probe, the probe should also be integrated with the screw connection with a maximum of 1 MΩ in the potential equalization.



The ground conductor or the potential equalization connection must have a cross-section of 4mm² (0.06in²) for the external earthing. With stranded wires, the cable ends should be fitted with suitable wire-end sleeves.



Intrinsically safe barrier ground must be less than 1 ohm.



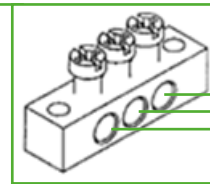
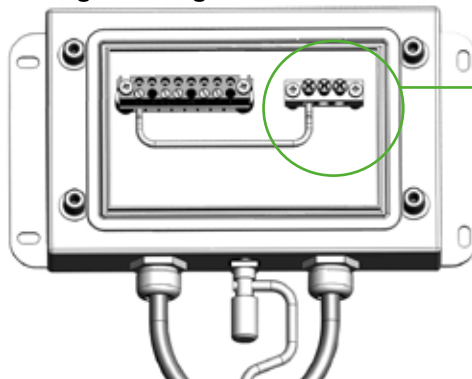
For installation in the U.S. internal earthing should be used. The wire cross-sectional must be in accordance with NEC Section 250.122.

External grounding:



Cable cross-section
maximum 4mm² (0.06in²)

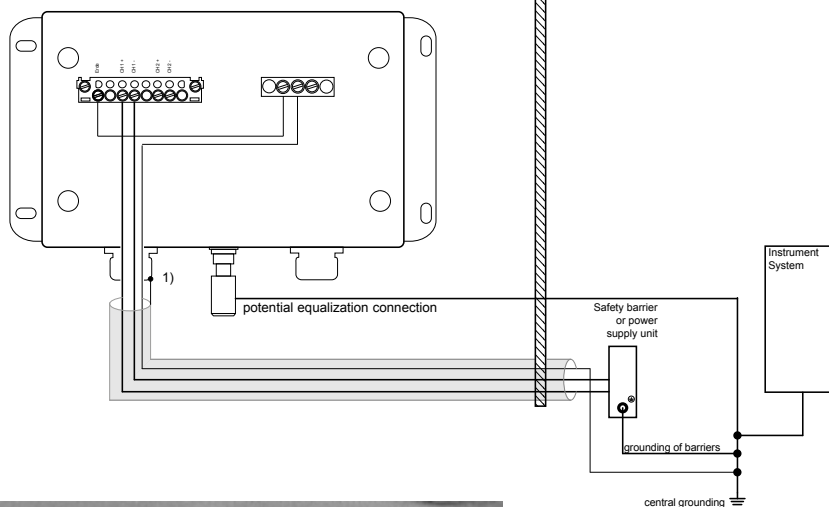
Internal grounding:



Cable cross-section
maximum 10 mm² (0.2in²)

Hazardous location

Unclassified location



1)

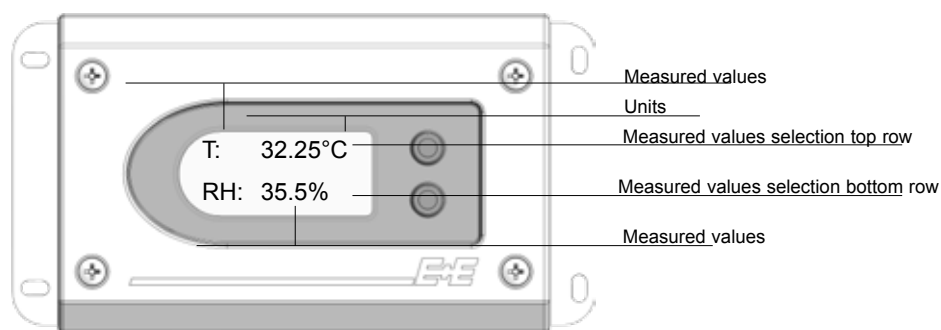


The braided screen should be turned back via the plastic insert on the cable connection. The introduction of the plastic insert presses the braided screen onto the interior wall of the metallic part.

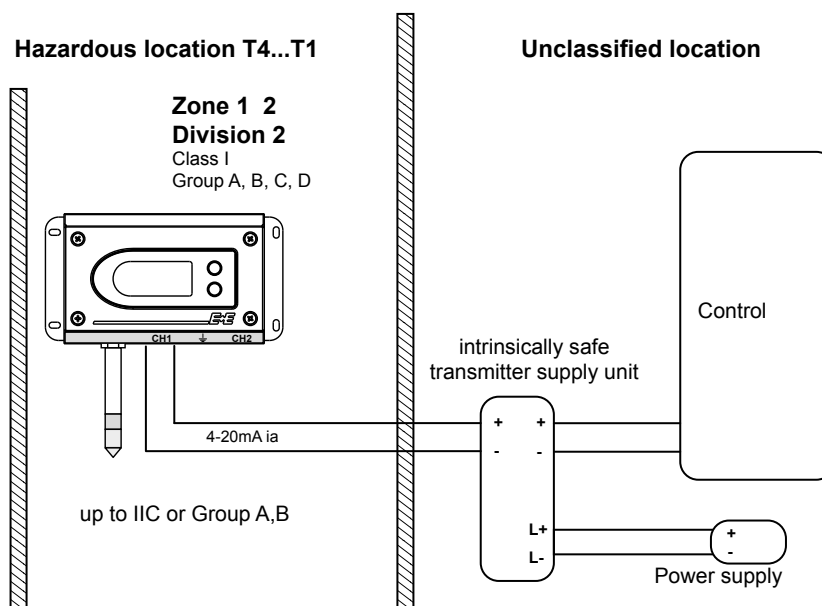
5. DISPLAY (OPTIONAL)



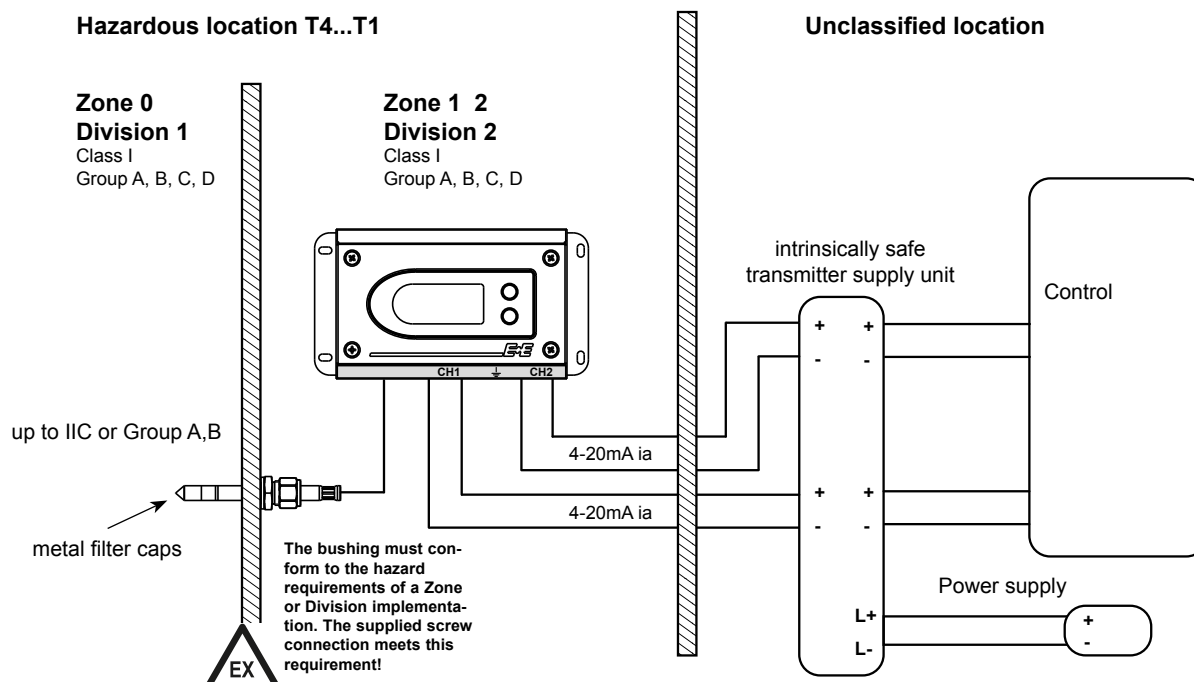
There is no display permitted in the gas hazard area for EPL Ga IIC or Class I, Division 1, Group A, B and in the dust hazard area for IIIA, IIIB and IIIC or Class II, III.



Example of EE300Ex wall mounting in Zone 1 or 2 or Division 2



Example of EE300Ex mounting of remote sensing probe in Zone 0 or Division 1 and transmitter in Zone 1 or 2 or Division 2



6. MAINTENANCE



It is essential that operation and maintenance in explosion hazard areas are only carried out by trained specialist personnel authorised to do so by the system operator.



For maintenance and repair work in explosion hazard areas, the standards EN60079-17 or IEC60079-17, EN60079-19 or IEC60079-19 and the relevant national regulations must be applied.



In the U.S. maintenance and inspection must be carried out in accordance with ANSI / ISA RP12.6.01-2003 and the NEC.

In Canada maintenance and inspection must be carried out in accordance with CEC

6.1 Filter replacement



The protective filter should be cleaned or replaced periodically, in particular whenever it has been noted that the response time has become longer.

When replacing a filter, ensure that the sensor is NOT touching the metallic filter cap!

6.2 Cleaning

6.2.1 Cleaning the display



To clean the display screen, use a damp cloth to avoid static.

6.2.2 Cleaning the sensor

Thanks to the very robust design of the sensor element, any cleaning required is very easy to carry out. This can be carried out using suitable chemicals such as isopropyl alcohol (normal industrial product). After cleaning in isopropyl alcohol, dip the sensor element in water and allow to dry. The cleaning time should not be more than 2 mins. To avoid damaging the sensor layer, the use of mechanical equipment is not permitted!

When screwing on the filter cap, ensure that the sensor is NOT touching the metallic filter cap!



6.3 Customer adjustment of humidity and temperature

See manual EE-PCS (product configuration software)

6.4 Ordering information for accessories

Designation

Stainless steel sinter filter

PTFE filter

Filter for moisture measurement in oil

Stainless steel lattice filter

Ball valve ISO 1/2" interior thread with ATEX approval

Configuration adapter for connection to the PC

Connection cable with protective circuit

between EE300Ex and configuration adapter

Blanking plate for lower housing part

Protective barrier STAHL 9002/13-280-093-001

Intrinsically safe 1-channel power supply device STAHL 9160/13-11-11

Intrinsically safe 2-channel power supply device STAHL 9160/23-11-11

Sealing plug for unused cable screw connection

Mounting flange 12mm (0.24")

Mounting flange 6mm (0.24")

1/2" ISO screw connection 12mm (0.24")

1/2" NPT screw connection 12mm (0.24")

1/2" welded connection 12mm (0.5")

1/2" ISO screw connection 6mm (0.24")

1/2" NPT screw connection 6mm (0.24")

O-ring for sliding fitting

sensor retraction tool 250 bar

sensor retraction tool 40 bar

Order code

HA010103EX

HA010105

HA010110

HA010109

HA011403

EE-PCA

HA011061

HA011401

HA011410

HA011405

HA011406

HA011402

HA010201

HA010207

HA011102

HA011103

HA011109

HA011104

HA011105

HA050308

ZM-WA-025-040-EST

BG-WA-103-045-EST

7. TECHNICAL DATA - EE300EX-HT

Measuring values

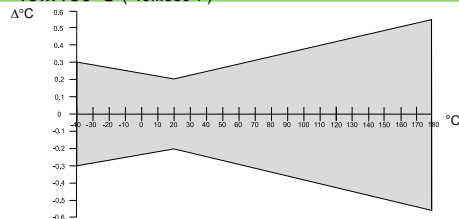
Relative humidity

Humidity sensor ¹⁾	HC1000
Measuring range ¹⁾	0...100% RH
Accuracy ²⁾ (including hysteresis, non-linearity and repeatability, traceable to international standards, administrated by NIST, PTB, BEV...)	
-15...40°C (5...104°F) ≤90% RH	± (1.3 + 0.3%*mv) % RH
-15...40°C (5...104°F) >90% RH	± 2.3% RH
-25...70°C (-13...158°F)	± (1.4 + 1%*mv) % RH
-40...180°C (-40...356°F)	± (1.5 + 1.5%*mv) % RH
Temperature dependence electronics	typ. 0.03% RH/°C
Response time with filter at 20°C (68°F) / t ₉₀	< 30 sec.

Temperature

Temperature sensor	Pt1000 (Tolerance class A, DIN EN 60751)
Measuring range sensor head	wall mounting: -40...60°C (-40...140°F)
	remote sensing probe: -40...180°C (-40...356°F)

Accuracy



Temperature dependence of electronics typical 0.005 °C/°C


Max. selectable Scaling Range

		from	to		unit
			wall mounting	remote sensing probe	
Dew/Frost point temp.	Td	-40 (-40)	60 (140)	100 (212)	°C (°F)
Wet bulb temperature	Tw	0 (32)	60 (140)	100 (212)	°C (°F)
Water vapour pressure	e	0 (0)	200 (3)	1100 (15)	mbar (psi)
Mixing ratio	r	0 (0)	425 (2900)	999 (9999)	g/kg (gr/lb)
Absolute humidity	dv	0 (0)	150 (60)	700 (300)	g/m³ (gr/ft³)
Specific enthalpy	H	-50 (-15000)	400 (150000)	2800 (999999)	kJ/kg (Btu/lb)
Water activity	aw	0	-	1	[]
Water content	x	0	-	100000	[ppm]

Outputs

freely selectable and scalable outputs 2 x 4 - 20 mA (2-wire) galvanically isolated R_L=(V_{cc}-9V)/20mA
Output 1 (CH1) must be connected!

General

Supply voltage (Class III) 	V _{cc min} =(9+R _L *0.02)VDC V _{cc max} =28VDC
Current consumption	max 20mA per channel
Pressure range for pressure tight sensor probe	refer to model
Serial interface for communication ³⁾	RS232
System requirements for software	WINDOWS XP or later
Protection class of housing	IP65; NEMA 4
Cable gland	M16 for cable diameter 5 - 10 mm (0.2 - 0.4")
Electrical connection	screw terminals max. 1.5 mm² (AWG 16)
Temperature range	sensor head according measuring range
	electronic -40...60°C (-40...140°F)
	electronic with display -20...60°C (-4...140°F)
Storage temperature range	electronic and sensor head -20...60°C (22...140°F)
Electromagnetic compatibility according	EN61326-1 EN61326-2-3 ICES-003 ClassB Industrial Environment FCC Part15 ClassB
Material	
Housing	Stainless Steel 1.4404
Probe cable	PTFE
Probe (without Filter)	Stainless Steel

1) Refer to the working range of the humidity sensor.

2) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).

The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

3) Configuration adapter EE-PCA and cabel HA011061 necessary.

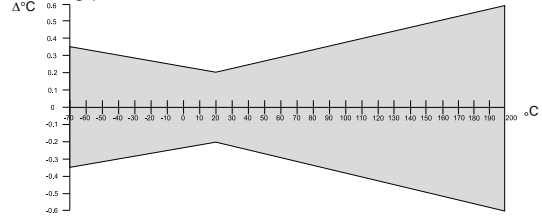


8. TECHNICAL DATA - EE300EX-xT

Measuring values

Temperature

Temperature sensor	Pt1000 (Tolerance class A, DIN EN 60751)
Measuring range sensor head	wall mounting: -40...60°C (-40...140°F) remote sensing probe: -70...200°C (-94...392°F)
Accuracy ¹⁾	




Temperature dependence of electronics	typ. 0.005 °C/°C
---------------------------------------	------------------


Outputs

Scaleable analogue output	4 - 20 mA (2-wire)	$R_L = (V_{CC} - 9V) / 20mA$
---------------------------	--------------------	------------------------------

General

Supply voltage (Class III) 	$V_{CC\ min} = (9 + R_L \cdot 0.02) VDC$ $V_{CC\ max} = 28VDC$
Current consumption	max 20mA
Pressure range for pressure tight sensor probe	0.1 ... 20bar (1.5...300psi)
Serial interface for communication ²⁾	RS232
System requirements for software	WINDOWS XP or later
Protection class of housing	IP65; NEMA 4
Cable gland	M16 for cable diameter 5 - 10 mm (0.2 - 0.4")
Electrical connection	screw terminals max. 1.5 mm ² (AWG 16)

Temperature range	sensor head	according measuring range
	electronic	-40...60°C (-40...140°F)
Storage temperature range	electronic with display	-20...60°C (-4...140°F)
	electronic and sensor head	-20...60°C (22...140°F)

Electromagnetic compatibility according		EN61326-1	EN61326-2-3	ICES-003 ClassB	
		Industrial Environment		FCC Part15 ClassB	
Material	housing	stainless steel 1.4404			
	probe cable	PTFE			
	temperature probe	stainless steel 1.4541			

1) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).

The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

2) Configuration adapter EE-PCA and cabel HA011061 necessary.

9. ATEX CERTIFICATE



Product Service

(1) EC Type Examination Certificate

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC Type Examination Certificate Number:

TPS 13 ATEX 38892 003 X



- (4) Equipment: Humidity and Temperature Transmitter Type: EE300Ex
 (5) Manufacturer: E+E Elektronik Ges.m.b.H.
 (6) Address: Langwiesen 7, 4209 Engerwitzdorf, Austria
 (7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
 (8) TÜV SÜD Product Service GmbH, notified body No. 0123 in accordance with Article 9 of the Council Directive 94/9/EC of March 23rd 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive.
 The examination and test results are recorded in the confidential report 71386133
 (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 1127-1:2011

EN 60079-11:2007

EN 60079-0:2009

EN 61241-11:2006

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
 (11) This EC Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.
 (12) The marking of the equipment shall include the following:

Equipment: II 1G Ex ia IIC T4 Ga II 1D Ex ia IIIC T 70°C Da IP65

Equipment with Display: II 2 G Ex ia IIC T4 Gb II 1G Ex ia IIB T4 Ga

Sensor: II 1G Ex ia IIC T6 Ga II 1D Ex ia IIIC T 70°C Da IP65

Certification body

Stuttgart, 05.03.2013

Andres Pfeil

Page 1 / 3

EC Type Examination Certificate without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail.

(Document no.: TPS 13 ATEX 38892 003 X)

The document is internally administrated under the following number: EX5 13 02 38892 003



Product Service

Schedule

(13)

(14) **EC Type Examination Certificate TPS 13 ATEX 38892 003 X**(15) Description of equipment:

The humidity and temperature transmitter EE300Ex is dedicated for use in industrial applications. The transmitter is available as a fixed install or with remote sensing probe. The EE300Ex transmitter is to be powered by an intrinsically safe power source.

Technical and electrical data:

Transmitter EE300Ex	Kenndaten
Input voltage (Ui)	28 V
Input power (Pi)	700 mW
Input current (Ii)	100 mA
Input capacitance (Ci)	2,2 nF
Input inductance (Li)	negligible small
protection category of equipment	IP65
Temperature range electronics	$-40 \leq T_{amb} \leq +60^{\circ}\text{C}$
Temperature range for humidity and temperature probe	$-40 \leq T_{amb} \leq +180^{\circ}\text{C}$
Temperature range for temperature probe	$-70 \leq T_{amb} \leq +200^{\circ}\text{C}$

(16) Test report: 71386133(17) Special conditions for safe use:

The EE300Ex transmitter with display may not be used in areas with explosive dust (IIIA, IIIB, IIIC).

The EE300Ex transmitter may only be operated with safety barriers.

In case of using both measurement channels, each channel must be driven separately via their own galvanic safety barriers.

For the use of the EE300Ex transmitter with remote probe in explosive area zone 0 the probe cable must be installed in a metallic, grounded protective tube.

The plastic filter-cap may not be used in explosive area zone 0 with chemicals of the explosion group IIC.

Page 2 / 3

EC Type Examination Certificate without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail.
(Document no.: TPS 13 ATEX 38892 003 X)

The document is internally administrated under the following number: EX5 13 02 38892 003



Product Service

The EE300Ex transmitter with the connector option may not be used in areas with explosive dust (IIIA, IIB, IIC) and in explosive area zone 0 with chemicals of the explosion group IIC.

(18) Essential health and safety requirements:

met by standards

Certification body

Andreas Pfeil
Andreas Pfeil

Stuttgart, 05.03.2013



Page 3 / 3

EC Type Examination Certificate without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail.

(Document no.: TPS 13 ATEX 38892 003 X)

The document is internally administrated under the following number: EX5 13 02 38892 003

TÜV SÜD Product Service GmbH · Zertifizierstelle · Ridlerstraße 65 · 80339 München · Germany

TÜV®



Product Service

1. Supplement to the EC Type Examination Certificate

(1) EC Type Examination Certificate Number:

TPS 13 ATEX 38892 003 X



- (2) Equipment: Humidity and Temperature Transmitter Type: EE300Ex
- (3) Manufacturer: E+E Elektronik Ges.m.b.H.
- (4) Address: Langwiesen 7, 4209 Engerwitzdorf, Austria
- (5) Description: The humidity and temperature transmitter EE300Ex is dedicated for use in industrial applications. The transmitter is available with fix installed or with remote sensing probe.
The humidity and temperature transmitter must be powered by an intrinsically safe power source, which shall be compatible with EE300Ex according to the entity concept.
EE300Ex configuration and adjustment can be done using the E+E Product Configuration Adapter HA011061
- (6) Supplement: Standard update to EN 60079-11:2012; Specification of temperature working range for the combined humidity and temperature probe and for the temperature probe.
- Test 1: Total immersion in dust according to EN 60079-11:2012 paragraph 5.6.5
- Test 2: Requirements for the E+E Product Configuration Adapter type HA011061 according to EN 60079-11:2012
- Test 3: Approval of the silicone foam gasket for the enclosure
- (7) Test results: The examination and test results are recorded in the confidential reports 713031470, 713030081 and 713038637.
- (8) The compliance with the Essential Health and Safety Requirements is fulfilled according to:

EN 1127-1:2011

EN 60079-11:2012

EN 60079-0:2012

Page 1 / 2

EC Type Examination Certificate without signature and official stamp shall not be valid.

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The document is internally administrated under the following number: EX5 13 01 38892 003

TÜV SÜD Product Service GmbH - Zertifizierstelle - Ridlerstraße 65 - 80339 München - Germany

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Product Service

Working temperature range for the probes:

Specification of the temperature class „TKG“ for use in gas area exposed to explosion hazards and „TKD“ for use in dust area exposed to explosion hazards as a function of the ambient temperature „Tamb“ for the humidity and temperature probe and the temperature probe:

TKG	TKD	Humidity and Temperature Probe	TKG	TKD	Temperature Probe
T6	80°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$	T6	80°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +60$
T5	95°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +75^{\circ}\text{C}$	T5	95°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +75^{\circ}\text{C}$
T4	130°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +110^{\circ}\text{C}$	T4	130°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +110^{\circ}\text{C}$
T3	195°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +175^{\circ}\text{C}$	T3	195°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +175^{\circ}\text{C}$
T2	200°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +180^{\circ}\text{C}$	T2	220°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +200^{\circ}\text{C}$
T1	200°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +180^{\circ}\text{C}$	T1	220°C	$-70^{\circ}\text{C} \leq T_{\text{amb}} \leq +200^{\circ}\text{C}$

- (9) The mark of the equipment shall include the following:

Equipment: II 1G Ex ia IIC T4 Ga II 1D Ex ia IIIC T 80°C Da

Equipment with Display: II 2G Ex ia IIC T4 Gb II 1G Ex ia IIB T4 Ga

Sensor: II 1G Ex ia IIC T6-T1 Ga II 1D Ex ia IIIC T 80°C...220°C Da

- (10) Additional special conditions for safe use:

The EE300Ex transmitter with display may not be used in areas with explosive dust (IIIA, IIIB, IIIC) and in gas explosive area zone 0 with group IIC.

To prevent electrostatic charges the remote probe body must be earthed with maximum 1MΩ.

If EE300Ex is located outside the explosive area, following parameters apply:

For connection at plug X47, pin 2,3,4 against pin 1:

maximum voltage: $U_m = \pm 28 \text{ V}$

maximum current: $I_m = \pm 100 \text{ mA}$

or alternatively

connection via E+E Product Configuration Adapter HA011061.

(Certification Body for Explosion Protection)

Michael Reuschel



Filderstadt, 28.04.2014

Page 2 / 2

EC Type Examination Certificate without signature and official stamp shall not be valid.

The certificates may be circulated only without alteration.

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The document is internally administrated under the following number: EX5 13 01 38892 003

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10. EC DECLARATION OF CONFORMITY

YOUR PARTNER IN SENSOR TECHNOLOGY



ELEKTRONIK®
Ges.m.b.H.

DECLARATION OF CONFORMITY

Product(s) Type	From Version:	Measure:	Output signal:
EE300Ex-HTxxx EE300Ex-xTxxx	201107_1 201108_1 201115_1	humidity / dewpoint / water activity / temperature	4-20mA



E+E ELEKTRONIK Ges.m.b.H
Langwiesen7
A-4209 Engerwitzdorf / AUSTRIA

EC-TYPE-EXAMINATION CERTIFICATE:

TPS 13 ATEX 38892 003 X

EE300Ex without display: II 1G Ex ia IIC T4 Ga II 1D Ex ia IIIC T80°C Da
EE300Ex with display: II 2G Ex ia IIB T4 Gb II 1G Ex ia IIC T4 Ga
EE300Ex remote probe: II 1G Ex ia IIC T6-T1 Ga II 1D Ex ia IIIC T80°C...220°C Da

The EC-Type-Examination was certified by the TÜV SÜD Product Service GmbH (notified body No 0123), Gottlieb-Daimler-Straße 7, D-70794 Filderstadt.

We declare under our sole responsibility that this product(s) (see product table above) corresponds to the following regulations and their subsequent modifications:

Directive Ref.	Directive area
2004/108/EC	Electromagnetic compatibility
94/9/EC	Equipment and protective systems in potentially explosive atmospheres
2011/65/EC	RoHS

The products conform with the following standards:

Standard	Year of ratification	Standard	Year of ratification
EN 1127-1	2011	EN 61326-1	2006
EN 60079-0	2012	EN 61326-2-3	2006
EN 60079-11	2012	EN 50581	2012

Designed for use in industrial environment.

Affixing of the CE marking (for the first time): 2013


Test Report: Conformity_EE300Ex_02.docx

Modification: Standard update


DI Timelthaler Wolfgang
(business manager)

12.05.2014

Date


Birkbauer Martin
(Ex-authorised person)

File: Declaration of conformity EE300Ex.docx

11. IECEx Certificate of Conformity - COC

		IECEx Certificate of Conformity	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>			
Certificate No.:	IECEx FMG 14.0017X	Issue No: 1	Certificate history: Issue No. 1 (2014-12-12) Issue No. 0 (2014-10-03)
Status:	Current	Page 1 of 4	
Date of issue:	2014-12-12		
Applicant:	E+E Elektronik GmbH Langwiesen 7 4209 Engerwitzdorf Austria		
Electrical Apparatus:	EE300EX-*T6S*****IC**		
Optional accessory:			
Type of Protection:	Ex ia		
Marking:	<u>EE300Ex Transmitter without Display:</u> Ex ia IIC T4 Ta = -40°C to 60°C Ga Ex ia IIIC T131°C Da <u>EE300Ex Transmitter with Display:</u> Ex ia IIC T4 Ta = -40°C to 60°C Gb, Ex ia IIB T4 Ta = -40°C to 60°C Ga <u>EE300Ex Remote Sensor:</u> Ex ia IIC T6-T1 Ta = -70°C to 200°C Ga Ex ia IIIC T80°C Da		
Approved for issue on behalf of the IECEx Certification Body:	J.E.Marquedant		
Position:	Manager, Electrical Systems		
Signature: (for printed version)			
Date:			
<p>1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.</p>			
Certificate issued by:			
FM Approvals LLC 1151 Boston-Providence Turnpike Norwood, MA 02062 United States of America		 <small>Member of the FM Global Group</small>	



IECEx Certificate of Conformity

Certificate No: IECEx FMG 14.0017X Issue No: 1

Date of issue: 2014-12-12 Page 2 of 4

Manufacturer: E+E Elektronik GmbH
Langwiesen 7
4209 Engerwitzdorf
Austria

Additional Manufacturing
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements

Edition:6.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"

Edition:6.0

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[US/FMG/ExTR14.0027/00](#)

Quality Assessment Report:

[DE/TPS/QAR12.0001/02](#)



IECEx Certificate of Conformity

Certificate No: IECEx FMG 14.0017X

Issue No: 1

Date of Issue: 2014-12-12

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

EE300EX-T6S*****IC**

CONDITIONS OF CERTIFICATION: YES as shown below:

"There is no display permitted in the dust hazardous area and the gas hazard area EPL Ga for group IIC.

" There is no filter cap made of plastic or with plastic parts permitted in the gas hazard area EPL Ga for group IIC."

" EE300Ex remote probe (temperature – humidity 12mm and temperature 6mm) must be earthed."

"The serial software configuration port of the EE300EX may only be used with the HA011601 Configuration Adapter and the HA011061 Connection Cable".

"EE300Ex with the connector option may not be used in dust hazard area and in gas hazard area EPL Ga for group IIC."

"For use EE300Ex with remote probe in EPL Ga the remote probe must be installed in a metallic grounded protective tube." "In case of using both measuring channels, each channel must be driven separately with their own galvanic safety barrier."



IECEx Certificate of Conformity

Certificate No: IECEx FMG 14.0017X

Issue No: 1

Date of Issue: 2014-12-12

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Topographical corrections to the certificate have been made.

12. FM CERTIFICATE USA



FM Approvals

1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781 762 4300 F: 781-762-9375 www.fmapprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

EE300EX-HT6SAxxxxbcFMde

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I,II,III/2/ABCDEFGH/T4 -40°C < Ta < 60°C

I/O/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

20/ AEx ia IIC T131°C -40°C < Ta < 60°C; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

b = Filter; C, D, E, I, J, K, L or M

c = Sensor Protection; x or 1

d = Special option; Blank or Gx

e = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SaxbcdefgFMhi

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I,II,III/2/ABCDEFGH/T4 -40°C < Ta < 60°C

I/O/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

20/ AEx ia IIC T131°C -40°C < Ta < 60°C; Entity – M1_1309080; IP65

To verify the availability of the Approved product, please refer to www.approvalguide.com
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Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	P _i	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFGH/T* Entity – M1_1309080; IP65

NI/I,II,III /2/ABCDEFGH/T*

I/O/AEx ia IIC T* Entity – M1_1309080; IP65

20/ AEx ia IIIC T80°C Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-40°C < Ta < 60°C
T5	-40°C < Ta < 75°C
T4	-40°C < Ta < 110°C
T3	-40°C < Ta < 175°C
T2	-40°C < Ta < 180°C
T1	-40°C < Ta < 180°C

a = Model; E, M, S or U

b = Electrical Connection; B, C or F

c = Probe – Cable Length; A, B, C, E, F, G or H

d = Probe Length; C, D, F, G, H, J, K or L

e = Zone Feedthrough (probe fitting): x, A, B, C, F or H

f = Filter; C, D, E, I, J, K, L or M

g = Sensor Protection; x or 1

h = Special option; Blank or Gx

i = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The EE300Ex Remote Probe is approved for in air applications only.
- 3) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SADaxxxbcFMde

IS/II/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;

NI/I /2/ABCD/T4 -40°C < Ta < 60°C

I/O/AEx ia IIB T4 -40°C < Ta < 60°C; Entity – M1_1309080;

I/1/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	P _i	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

To verify the availability of the Approved product, please refer to www.approvalguide.com

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0003049300

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a = Electrical Connection; B, C or F
b = Filter; C, D, E, I, J, K, L or M
c = Sensor Protection; x or 1
d = Special option; Blank or Gx
e = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SaDbcdefgFMhi

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;
NI/I/2/ABCD/T4 -40°C < Ta < 60°C
I/O/AEx ia IIB T4 -40°C < Ta < 60°C; Entity – M1_1309080;
I/1/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFGH/T* Entity – M1_1309080; IP65
NI/I,II,III /2/ABCDEFGH/T*
I/O/AEx ia IIC T* Entity – M1_1309080; IP65
20/ AEx ia IIC T80°C Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-40°C < Ta < 60°C
T5	-40°C < Ta < 75°C
T4	-40°C < Ta < 110°C
T3	-40°C < Ta < 175°C
T2	-40°C < Ta < 180°C
T1	-40°C < Ta < 180°C

a = Model; E, M, S or U
b = Electrical Connection; B, C or F
c = Probe – Cable Length; A, B, C, E, F, G or H
d = Probe Length; C, D, F, G, H, J, K or L
e = Zone Feedthrough (probe fitting); x, A, B, C, F or H
f = Filter; C, D, E, I, J, K, L or M
g = Sensor Protection; x or 1
h = Special option; Blank or Gx
i = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

To verify the availability of the Approved product, please refer to www.approvalguide.com
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- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The EE300Ex Remote Probe is approved for in air applications only.
- 3) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-xT6SAxxxxFMb

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I,II,III/2/ABCDEFGH/T4 -40°C < Ta < 60°C

I/O/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

20/ AEx ia IIIC T131°C -40°C < Ta < 60°C; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

b = Software Code: 6 Digits (Not Safety Relevant)

EE300EX-xT6SaxbcdeFMf

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I,II,III /2/ABCDEFGH/T4 -40°C < Ta < 60°C

I/O/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

20/ AEx ia IIIC T131°C -40°C < Ta < 60°C; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFGH/T* Entity – M1_1309080; IP65

NI/I,II,III /2/ABCDEFGH/T*

I/O/AEx ia IIC T* Entity – M1_1309080; IP65

20/ AEx ia IIIC T80°C Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-70°C < Ta < 60°C
T5	-70°C < Ta < 75°C
T4	-70°C < Ta < 110°C
T3	-70°C < Ta < 175°C
T2	-70°C < Ta < 200°C
T1	-70°C < Ta < 200°C

a = Model; H

b = Electrical Connection; B, C or F

c = Probe – Cable Length; A, B, C, E, F, G or H

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d = Probe length; E
e = Zone Feedthrough (probe fitting): x, I or J
f = Software Code: 6 Digits (Not Safety Relevant)

Special conditions of use:

- 1) The EE300Ex Remote Probe is approved for in air applications only.
- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-xT6SADaxxxFMb

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;
NI/I/2/ABCD/T4 -40°C < Ta < 60°C
I/O/AEx ia IIB T4 -40°C < Ta < 60°C; Entity – M1_1309080;
I/1/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F
b = Software Code: 6 Digits (Not Safety Relevant)

EE300EX-xT6SaDbcdeFMf

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;
NI/I/2/ABCD/T4 -40°C < Ta < 60°C
I/O/AEx ia IIB T4 -40°C < Ta < 60°C; Entity – M1_1309080;
I/1/AEx ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFGH/T* Entity – M1_1309080; IP65
NI/I,II,III/2/ABCDEFGH/T*
I/O/AEx ia IIC T* Entity – M1_1309080; IP65
20/ AEx ia IIC T80°C Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-70°C < Ta < 60°C
T5	-70°C < Ta < 75°C
T4	-70°C < Ta < 110°C
T3	-70°C < Ta < 175°C
T2	-70°C < Ta < 200°C
T1	-70°C < Ta < 200°C



a = Model; H
b = Electrical Connection; B, C or F
c = Probe – Cable Length; A, B, C, E, F, G or H
d = Probe length; E
e = Zone Feedthrough (probe fitting); x, I or J
f = Software Code: 6 Digits (Not Safety Relevant)

Special conditions of use:

- 1) *The EE300Ex Remote Probe is approved for in air applications only.*
- 2) *The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.*

Equipment Ratings:

Intrinsically Safe for Class I, II, III Division 1, Groups A, B, C, D, E, F, and G hazardous (classified) locations in accordance with drawing M1_1309080,

Nonincendive for Class I, II, III Division 2, Groups A, B, C, D, E, F, and G hazardous (classified) locations,

Intrinsically Safe for Class I, Zone 0, Group IIC hazardous (classified) locations in accordance with drawing M1_1309080,

Intrinsically Safe for Class II and III, Zone 20, Group IIIC hazardous (classified) locations in accordance with drawing M1_1309080.

FM Approved for:

E+E ELEKTRONIK Ges.m.b.H
Engerwitzdorf, Austria



This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

FM Class 3600	2011
FM Class 3610	2010
FM Class 3611	2004
FM Class 3810	2005
ANSI/ISA 61010-1	2004
ANSI/IEC 60529	2004
ANSI/ISA 60079-0	2009
ANSI/ISA 60079-11	2011

Original Project ID: 0003049300

Approval Granted: October 2, 2014

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
141126	December 15, 2014		

FM Approvals LLC


J.E. Marquedant
Manager, Electrical Systems

15 December 2014
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com
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13. FM CERTIFICATE CANADA



FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781 762 4300 F: 781-762-9375 www.fmapprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

EE300EX-HT6SAxxxxbcFMde

IS/I, II, III/1/ABCDEFG/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I /2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIC T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	CI
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

b = Filter; C, D, E, I, J, K, L or M

c = Sensor Protection; x or 1

d = Special option; Blank or Gx

e = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SaxbcdefgFMhi

IS/I, II, III/1/ABCDEFG/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/I/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIC T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080; IP65

To verify the availability of the Approved product, please refer to www.approvalguide.com

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0003049300C

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Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	P _i	L _i	C _i
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFG/T* Entity – M1_1309080; IP65

NI/I/2/ABCD/T*

I/O/Ex ia IIC T* Ga Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-40°C < Ta < 60°C
T5	-40°C < Ta < 75°C
T4	-40°C < Ta < 110°C
T3	-40°C < Ta < 175°C
T2	-40°C < Ta < 180°C
T1	-40°C < Ta < 180°C

a = Model; E, M, S or U

b = Electrical Connection; B, C or F

c = Probe – Cable Length; A, B, C, E, F, G or H

d = Probe Length; C, D, F, G, H, J, K or L

e = Zone Feedthrough (probe fitting): x, A, B, C, F or H

f = Filter; C, D, E, I, J, K, L or M

g = Sensor Protection; x or 1

h = Special option; Blank or Gx

i = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The EE300Ex Remote Probe is approved for in air applications only.
- 3) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SADaxxxbcFMde

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;

NI/I/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIB T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080;

I/1/Ex ia IIC T4 -40°C < Ta < 60°C Gb; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	P _i	L _i	C _i
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

To verify the availability of the Approved product, please refer to www.approvalguide.com

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0003049300C

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b = Filter; C, D, E, I, J, K, L or M
 c = Sensor Protection; x or 1
 d = Special option; Blank or Gx
 e = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-HT6SaDbcdefgFMhi

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;

NI/I/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIB T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080;

I/I/Ex ia IIC T4 -40°C < Ta < 60°C Gb; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or Ii	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I/1/ABCD/T* Entity – M1_1309080; IP65

NI/I/2/ABCD/T*

I/O/Ex ia IIC T* Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-40°C < Ta < 60°C
T5	-40°C < Ta < 75°C
T4	-40°C < Ta < 110°C
T3	-40°C < Ta < 175°C
T2	-40°C < Ta < 180°C
T1	-40°C < Ta < 180°C

a = Model; E, M, S or U
 b = Electrical Connection; B, C or F
 c = Probe – Cable Length; A, B, C, E, F, G or H
 d = Probe Length; C, D, F, G, H, J, K or L
 e = Zone Feedthrough (probe fitting); x, A, B, C, F or H
 f = Filter; C, D, E, I, J, K, L or M
 g = Sensor Protection; x or 1
 h = Special option; Blank or Gx
 i = Software Code: 11 Digits (Not Safety Relevant)

Special conditions of use:

- 1) Filter options C, E, J, K and L are not allowed in Groups A or B for Division 1 and EPL Ga IIC for Zone 0.
- 2) The EE300Ex Remote Probe is approved for in air applications only.

To verify the availability of the Approved product, please refer to www.approvalguide.com
 FM Approvals HLC 5/13 0003049300C
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- 3) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-xT6SAxxxxFMb

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/II/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIC T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

b = Software Code: 6 Digits (Not Safety Relevant)

EE300EX-xT6SaxbcdeFMf

IS/I, II, III/1/ABCDEFGH/T4 -40°C < Ta < 60°C; Entity – M1_1309080; IP65

NI/II/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIC T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080; IP65

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I,II,III/1/ABCDEFGH/T* Entity – M1_1309080; IP65

NI/II/2/ABCD/T*

I/O/Ex ia IIC T* Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-70°C < Ta < 60°C
T5	-70°C < Ta < 75°C
T4	-70°C < Ta < 110°C
T3	-70°C < Ta < 175°C
T2	-70°C < Ta < 200°C
T1	-70°C < Ta < 200°C

a = Model; H

b = Electrical Connection; B, C or F

c = Probe – Cable Length; A, B, C, E, F, G or H

d = Probe length; E

e = Zone Feedthrough (probe fitting): x, I or J

f = Software Code: 6 Digits (Not Safety Relevant)

Special conditions of use:

- 1) The EE300Ex Remote Probe is approved for in air applications only.

To verify the availability of the Approved product, please refer to www.approvalguide.com



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- 2) The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.

EE300EX-xT6SADaxxxFMb

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;

NI/I/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIC T4 -40°C < Ta < 60°C; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

a = Electrical Connection; B, C or F

b = Software Code: 11 Digits (Not Safety Relevant)

EE300EX-xT6SaDbcdeFMf

IS/I/1/CD/T4 -40°C < Ta < 60°C; Entity – M1_1309080;

NI/I/2/ABCD/T4 -40°C < Ta < 60°C

I/O/Ex ia IIB T4 -40°C < Ta < 60°C Ga; Entity – M1_1309080;

I/1/Ex ia IIC T4 -40°C < Ta < 60°C Gb; Entity – M1_1309080;

Entity parameters:

Terminals	Vmax or Ui	I _{max} or I _i	Pi	Li	Ci
CH 1: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF
CH 2: + and -	6.4Vdc ≤ Ui ≤ 28Vdc	100mA	0.7W	0mH	2.2nF

Remote probe:

IS/I/1/ABCD/T* Entity – M1_1309080; IP65

NI/I/2/ABCD/T*

I/O/Ex ia IIC T* Entity – M1_1309080; IP65

T* - Temperature Code

T-Code	Ambient Temperature
T6	-70°C < Ta < 60°C
T5	-70°C < Ta < 75°C
T4	-70°C < Ta < 110°C
T3	-70°C < Ta < 175°C
T2	-70°C < Ta < 200°C
T1	-70°C < Ta < 200°C

a = Model; H

b = Electrical Connection; B, C or F

c = Probe – Cable Length; A, B, C, E, F, G or H

d = Probe length; E

e = Zone Feedthrough (probe fitting): x, I or J

f = Software Code: 6 Digits (Not Safety Relevant)

To verify the availability of the Approved product, please refer to www.approvalguide.com

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Special conditions of use:

- 1) *The EE300Ex Remote Probe is approved for in air applications only.*
- 2) *The serial software configuration port of the EE300EX may only be used with the Product Configuration Adapter HA011061.*

Equipment Ratings:

Intrinsically Safe for Class I, II, III Division 1, Groups A, B, C, D, E, F, and G hazardous locations in accordance with drawing M1_1309080,

Nonincendive for Class I Division 2, Groups A, B, C and D hazardous locations,

Intrinsically Safe for Class I, Zone 0, Group IIC hazardous locations in accordance with drawing M1_1309080,

FM Approved for:

E+E ELEKTRONIK Ges.m.b.H
Engerwitzdorf, Austria



This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

CAN/CSA C22.2 No. 0-M91	2006
CAN/CSA C22.2 No. 142-M1987	2004
CAN/CSA C22.2 No. 213-M1987	2004
CAN C22.2 No. 157-92	2006
CSA C22.2 No. 1010.1	2004
CSA C22.2 No. 60079-0	2009
CSA C22.2 No. 60079-11	2011


Original Project ID: 0003049300

Approval Granted: October 2, 2014

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
141126	December 15, 2014		

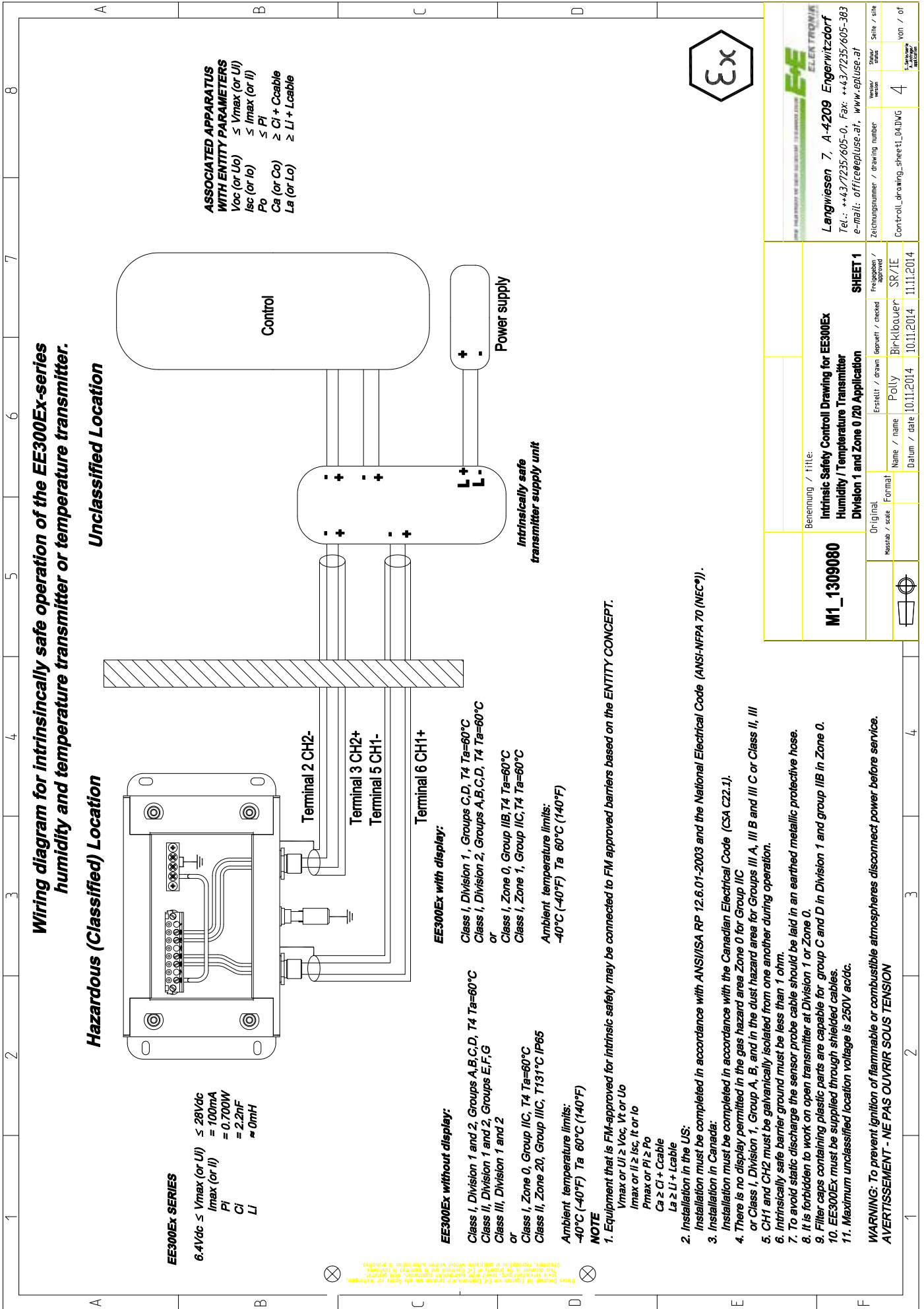
FM Approvals LLC


J.E. Marquardt
Manager, Electrical Systems

15 December 2014
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com
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14. CONTROL DRAWING M1_1309080



Unclassified Location

Control

EE300Ex remote probe:

Class I, Division 1 and 2, Groups A,B,C,D, T6 - T1
 Class II, Division 1 and 2, Groups E,F,G
 Class III, Division 1 and 2
 or
 Class I, Zone 0, Group IIC, T6-T1
 Class II, Zone 20, Group IIC, T80°C IP65



Note:
T6 and T5 only if EE300Ex is in unclassified location

Note for humidity and temperature probe:
 T16 temperature class based on -40°C (-40°F) T_a 60°C (140°F)
 T15 temperature class based on -40°C (-40°F) T_a 75°C (167°F)
 T14 temperature class based on -40°C (-40°F) T_a 110°C (230°F)
 T13 temperature class based on -40°C (-40°F) T_a 175°C (347°F)
 T12 temperature class based on -40°C (-40°F) T_a 180°C (356°F)
 T11 temperature class based on -40°C (-40°F) T_a 180°C (356°F)

Note for temperature probe:
 T16 temperature class based on -70°C (-94°F) Ta 60°C (140°F)
 T15 temperature class based on -70°C (-94°F) Ta 75°C (167°F)
 T14 temperature class based on -70°C (-94°F) Ta 110°C (230°F)
 T13 temperature class based on -70°C (-94°F) Ta 175°C (347°F)
 T12 temperature class based on -70°C (-94°F) Ta 200°C (392°F)
 T11 temperature class based on -70°C (-94°F) Ta 200°C (392°F)

Note:
Intrinsic safe supply for EE300Ex is necessary if remote probe is in hazardous location.

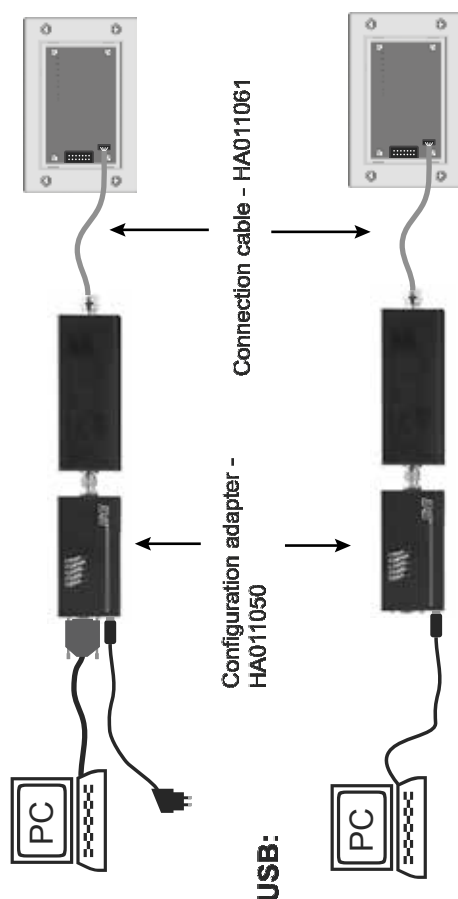


	M1_1309080		Benennung / title: Intrinsic Safety Control Drawing for EE300Ex Humidity / Temperature Transmitter Division 1 and Zone 0 I20 Application			
Original	Name / name Datum / date	Erstellt / drawn Freigegeben / approved	Geprüft / checked Freigegeben / approved	SHEET 2		Zeichnungsnummer / drawing number Version / version Status / status Skills / skills von / of
						4 Control_drawing_sheet2_04.IWG von / of

Product Configuration Adapter (PCA) HA011061:

HA011061 only for Unclassified Location



RS232 (the external power supply required is included as standard with the configuration adapter):



Ambient temperature limits:
-40°C (-40°F) Ta 40°C (104°F)

Note: Maximum unclassified location voltage is 250V ac/dc



	M1_1309080		Benennung / title: Intrinsic Safety Control Drawing for EE300Ex Humidity / Temperature Transmitter			
Original		Name / name Datum / date	Erstellt / drawn Polly	Geprüft / checked Birkblauer	Freigegeben / approved SR/IE	Zeichnungsnummer / drawing number 04.09.2014 04.09.2014
Masstab / scale		Format	SHEET 3		Versus / version 1	Status / status 5. Änderung
				Langwiesen 7, A-4209 Engerwitzdorf Tel.: ++43/7235/605-0, Fax: ++43/7235/605-383 e-mail: office@elequa.at , www.elequa.at		von / of 1

HEAD OFFICE:

E+E ELEKTRONIK Ges.m.b.H.

Langwiesen 7

A-4209 Engerwitzdorf

Austria

Tel: +43 7235 605 0

Fax: +43 7235 605 8

info@epluse.com

www.epluse.com

SALES OFFICES:

E+E CHINA / BEIJING

info@epluse.cn

www.epluse.cn

E+E CHINA / SHANGHAI

info@epluse.cn

www.epluse.cn

E+E GERMANY

info@epluse.de

www.epluse.de

E+E FRANCE

info@epluse.fr

www.epluse.fr

E+E ITALY

info@epluse.it

www.epluse.it

E+E KOREA

info@epluse.co.kr

www.epluse.co.kr

E+E USA

office@epluse.com

www.epluse.com